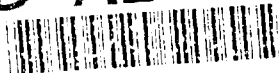


**ST. LOUIS DISTRICT CULTURAL RESOURCE
MANAGEMENT REPORT NUMBER 17**

AD-A245 724



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**SHALLOW SUBSURFACE GEOLOGY, GEOMORPHOLOGY AND
LIMITED CULTURAL RESOURCE INVESTIGATIONS OF THE
MEREDOSIA VILLAGE AND MEREDOSIA LAKE LEVEE AND
DRAINAGE DISTRICTS, SCOTT, MORGAN, AND CASS
COUNTIES ILLINOIS**

Contract No. DACW43-82-D-0083

by Edwin R. Hajic and David S. Leigh

**Harold Hassen, Principal Investigator,
Center for American Archeology**

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ST. LOUIS DISTRICT CULTURAL RESOURCE MANAGEMENT REPORT NUMBER 17

**Shallow Subsurface Geology, Geomorphology and Limited Cultural Resource
Investigations of the Meredosia Village and Meredosia Lake Levee and
Drainage Districts, Scott, Morgan, and Cass Counties, Illinois.**



Contract No. DACW43-82-D-0083

by
Edwin R. Hajic and David S. Leigh

Harold Hassen, Principal Investigator
Center for American Archeology

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ABSTRACT

The Meredosia Village and Meredosia Lake Levee and Drainage District study is the fifth of an ongoing series of combined geologic, geomorphic, and archeological surveys of lower Illinois River valley levee and drainage districts. Subsurface investigations in Illinois Valley deposits are used in concert with geomorphic analysis and radiocarbon dates to identify, spatially delimit and date lithostratigraphic units, interpret depositional environments, and reconstruct the terminal Wisconsinan and Holocene valley evolution. Within this contextual framework, evaluations of the location and preservation potentials for surface and buried archeological sites are made.

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INTRODUCTION - PROBLEM STATEMENT

Since the late 1920's the Illinois River valley has undergone considerable artificial modification, conducted largely by federal agencies. An extensive levee system has been constructed along the Illinois and its major tributaries for flood control and navigation purposes. Floodplain drainage ditch networks also serve needs of the local farming community. The U.S. Army Corps of Engineers, St. Louis District, is planning a program of renewed levee modification and extension of drainage ditch networks in the lower valley of the Illinois River from Otter Creek (River mile 15) to Beardstown (River mile 90).

Archeological sites in alluvial contexts are frequently buried by sediments indicative of a variety of depositional environments characteristic of dynamic fluvial systems (i.e. Hoyer, 1980; Bettis and Thompson, 1981; Gladfelter, 1981; Ahler, 1976; Stafford, 1981; Chapman, 1978; Hoffman, 1980). The Illinois River valley is no exception to these conditions (Wiant, 1980; Hajic and Styles, 1982; Hajic, 1981a; Kraus, 1980; Houart, 1971; Farnsworth, 1976). Levee and drainage ditch construction on and within the Illinois floodplain necessarily requires excavation and sediment movement, potentially at the expense of buried archeological deposits. Aware of these archeological concerns, the Corps of Engineers desires to select borrow locations which would minimize archeological damage, and still provide construction material with suitable engineering properties. The Corps of Engineers has contracted the Center for American Archeology, Contract Archeology Program, to develop a predictive model that can effectively estimate the relative potential of encountering buried surfaces which might contain archeological material in selected levee and drainage districts (i.e. Scope of Work, Appendix D). The problem involves identification of possible buried site locations and their preservation potentials.

Historically, the Corps of Engineers has partitioned the Illinois floodplain into a continuous series of levee and drainage districts. These districts comprise the basic study units of the ongoing project. Districts extend roughly 7 to 14 km along the valley and are separated by

canalized and/or leveed major valley tributaries. It is within this organizational framework of selected districts that the predictive modeling necessarily proceeds.

THEORETICAL ORIENTATION

The Illinois valley has been a changing landscape for at least the last 13,000 years (Hajic, 1983b; Hajic and Styles, 1982; Butzer, 1977). Because archeological sites are deposits on landscapes, the quality of archeological site location predictive modeling capabilities directly depends upon the degree to which the present landscape, former landscapes and systematic formational processes are understood. In the stratigraphic record landscape change by geomorphic processes operating through time is evidenced. Furthermore, the stratigraphic record holds clues to archeological site location through interpretation of depositional environments by identifying and dating sedimentary units and lithofacies associations. Consequently, the Corps of Engineers project has been viewed from inception as a geologic problem as much as an archeological one. Buried archeological site potentials are most adequately evaluated in the context of a model of terminal Wisconsinan and Holocene evolution of the lower Illinois River fluvial system developed from a temporally grounded stratigraphic and sedimentologic framework. The reconstruction emphasizes identification of sedimentary units and paleogeomorphic surfaces as well as providing interpretations of the depositional environments and processes responsible for the observed stratigraphy. Furthermore, while broad in scope, the geologic reconstruction emphasizes construction of an absolute time framework which is sufficiently detailed to be archeologically relevant (see Appendix C, this volume).

Prior to fieldwork, several expectations regarding investigations of the lower Illinois River valley were outlined: 1) Due to the regional physiographic position of the Illinois River in the midcontinent, the geologic history would be potentially complex. The Illinois is tributary to the Mississippi River and the lower Illinois valley would have adjusted in response to fluvial events in the Mississippi valley (Clayton, 1982; Clayton and Moran, 1982). Simultaneously the Illinois valley has periodically served as drainageway for variable discharge from the Lake

Michigan Basin (Hansel et al., in preparation; Evenson et al., 1976; Willman, 1971; Hough, 1958). 2) Fluvial processes are likely to vary along the 120 km study reach of the Illinois valley at any particular time. This expectation is largely a consequence of current theoretical views of fluvial systems and processes. Changes external to a fluvial system, as well as changes inherent in the system, (i.e. eclipsing a geomorphic threshold) can trigger a set of complex responses involving erosion and deposition which may co-occur along different reaches of the system (Schumm, 1973; 1976).

Within a complex natural fluvial system, one event can trigger a complex reaction (morphologic and/or stratigraphic) as the components of the system respond progressively to change. This principal provides an explanation of the complexities of the alluvial chronologies, and it suggests that an infrequent event, although performing little of the total work within a drainage system, may, in fact be the catalyst that causes the crossing of a geomorphic threshold and the triggering of a complex sequence of events that will produce significant landscape modification (Schumm, 1973:307).

3) In addition to evaluating buried site potential, the collection of cores for a three dimensional reconstruction would provide a wealth of paleoenvironmental data. 4) Due to the mandated organizational framework of the valley, subsurface investigations would be intensive within individual districts selected by the Corps of Engineers and proceed one district at a time. The model would ultimately be for the entire lower 120 km of the Illinois valley although not all districts would be examined. The predictive capability of successive district studies would increase as the geologic model progressively developed. 5) A large number of radiocarbon dates would be required to develop the geologic model at an appropriate scale.

RESEARCH GOALS AND METHODOLOGY

The primary research goal, as outlined in Corps of Engineers scope of work, is to model location and preservation potentials for buried archeological sites in Illinois River valley levee and drainage districts. While the goal is archeological in nature, achieving it requires utilizing not just geomorphic and geologic techniques and methods, but more importantly, the interpretations of landscape change and development resulting from these techniques and methods.

Unlike previous geological and geomorphological investigations in the lower Illinois River valley (Butzer, 1977; Rubey, 1952; Root, 1935), most effort is being invested in subsurface stratigraphic investigation using solid cores collected with a Giddings hydraulic soil probe. Holocene sediments may be in excess of 15.2 m (50 ft.) in thickness and valley-bottom outcrops are normally limited to a few meters exposed in drainage ditches. The cores are being used to identify and trace depositional units, buried surfaces and soils; identify vertical and lateral stratigraphic relationships; interpret depositional environments; define paleochannel locations and morphology; recover datable organic material; and on occasion recover evidence of cultural occupation. Transverse valley cross-sections are constructed to provide a three-dimensional stratigraphic framework. Known surface site distributions from a variety of largely systematic surveys are being examined for each district and a limited survey at core locations is conducted. Under separate scopes of work, surface surveys are being performed along corridors paralleling levees (c.f. Hassen and Batura, 1983). These surveys normally lag behind the geologic/geomorphic investigations. Supplementing the principal research goals, the solid cores contain a wealth of paleoenvironmental data. Organic matter, molluscs and gastropods are at times abundant. The scope of work does not allow faunal and floral analyses; however, the collections have been curated for future study. Also, information provided from cores allows the alluvial record of the lower Illinois valley to be integrated into the regional late Wisconsinan and Holocene sequence. As the Illinois system is intimately linked through fluvial processes and responses to both the Mississippi valley and the Lake

Michigan Basin, its evolution may provide clues to the timing of events in these related systems.

The intent of this report, the fifth in the series of studies of Illinois River levee and drainage districts, is to evaluate the potential of encountering buried archeological sites in the Meredosia Village and Meredosia Lake Levee and Drainage Districts. The first report of this series (Eldred and Spankey Districts; Hajic and Hassen, 1980) (Figure 1) focused on the recognition and familiarization of soils, sediments, valley geomorphic features and their interrelationships. Rough approximations of buried site potentials were made. In addition to identifying this potential in the Nutwood District (Hajic, 1981b), it was noted that shallow subsurface sediments could be divided into seven distinct units traceable within the district. It was further noted that the distribution of some of these units had little or no relationship to the present floodplain morphology.

In the Hartwell and Hillview Districts (Hajic, 1981c; 1983b) emphasis was placed on identifying the continuity and variability of the seven sedimentary units defined in the Nutwood District. The definition of unit boundaries was refined. A limited number of radiocarbon dates from the Nutwood, Hartwell and Hillview Districts (see Appendix C, Hajic, 1983b) allowed construction of an initial temporal framework for the sedimentary units. At this stage, radiocarbon dates are second only to stratigraphic data in their importance to the project, and a considerably larger number of samples must be run for the model to be truly effective.

The Meredosia Districts provide an opportunity to investigate relict landforms and associated sediments which are absent from previously studied Illinois Valley districts located farther to the south (Figure 1).

LOCATION

The Meredosia Village and Meredosia Lake Levee and Drainage Districts are located in northwestern Scott, western Morgan, and southwestern Cass counties (Figure 1). The Meredosia Village District is

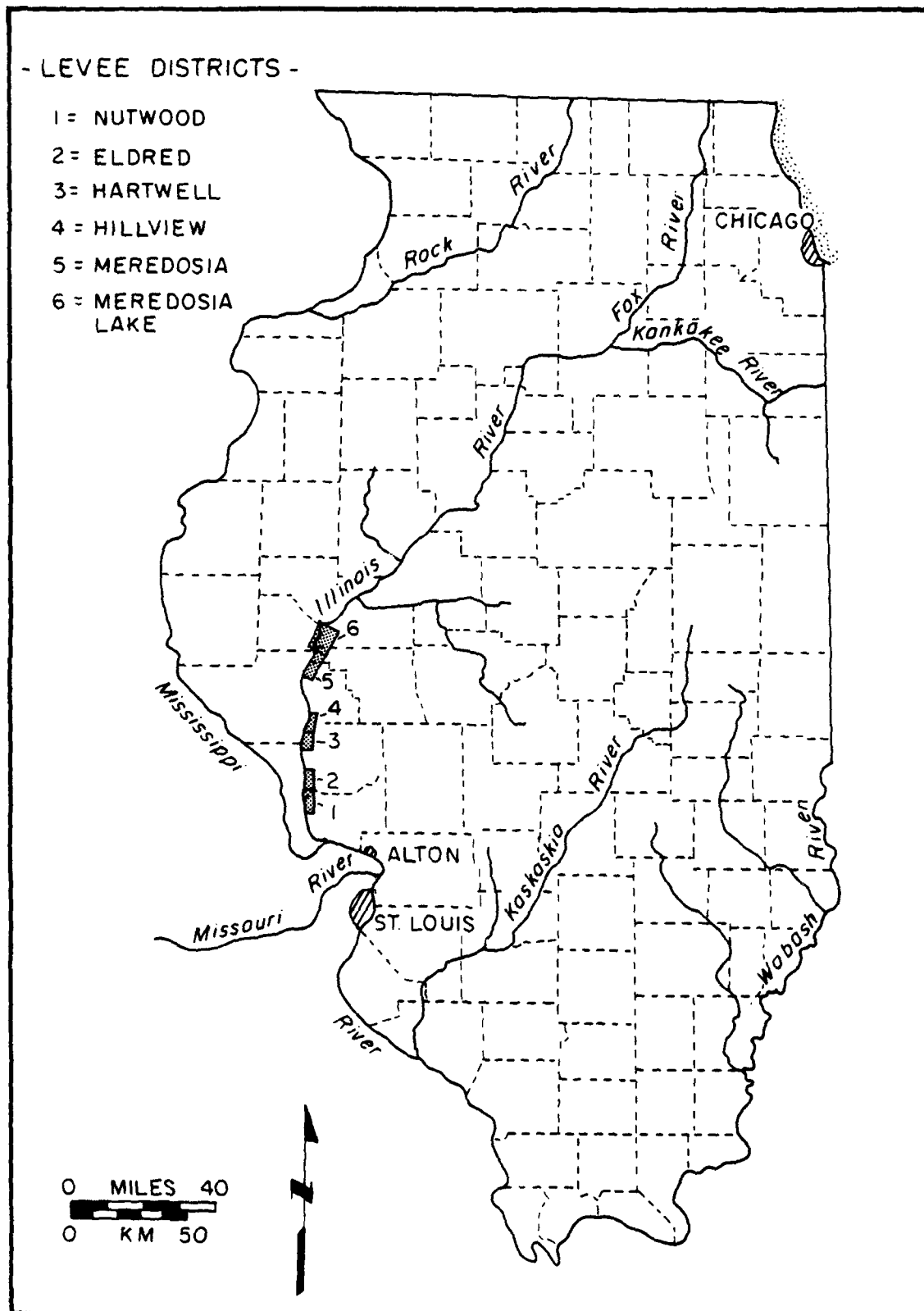


Figure 1. Location of the Meredosia Village and Meredosia Lake Levee and Drainage Districts, Scott, Morgan and Cass Counties, Illinois.

bounded by canalized Coon Run to the south and southeast, and by levees on Willow Creek to the north. To the west are Illinois River backwaters, most notably Smith Lake and the southern extent of Meredosia Lake, and the Illinois River by the town of Meredosia (Figure 2). Valley margin bluffs form the eastern boundary of the northern half of the district and are 200-300 km east of Coon Run in the southern half. The Meredosia Village Levee and Drainage District spans Illinois River miles 67.0 to 72.9.

Southern and northern boundaries on the Meredosia Lake Levee and Drainage District are levees of Willow Creek and Indian Creek respectively (Figure 3). To the west is Meredosia Lake. The eastern boundary is primarily state Highway 100. The Meredosia Lake Levee and Drainage District is between Illinois River miles 72.9 and 79.0.

At Willow Creek, the Illinois Valley is 13 km wide. To the south it gradually tapers to 5 km at its mouth. Immediately north of Willow Creek, it abruptly widens to over 16 km. The Illinois River hugs the western valley margin for its first 61 river miles, but uncharacteristically diverts up to 7.5 km away from the western bluffline at the latitude of the Meredosia Districts.

FIELD AND LABORATORY METHODS

To reconstruct the three dimensional Holocene valley structure in the Meredosia Village and Meredosia Lake Levee and Drainage Districts, coring was a necessity. One hundred twenty-seven solid cores 6.4 cm (2.5 in) or 8.9 cm (3.5 in) in diameter were extracted with a trailer mounted Giddings hydraulic soil probe. Additional sampling, depending upon sediment type, was accomplished with a 5.1 cm (2 in) flight auger.

The Giddings machine retrieves a largely undisturbed solid core by hydraulically pushing a hollow 1.25 meter (4 ft) core barrel into the ground. When the tube is retracted, the sediment/soil core is gently retained within the tube by friction at the cutting bit until shaken out the top of the core barrel by the operator. A continuous core is obtained by returning repeatedly to the same hole. The machine cannot

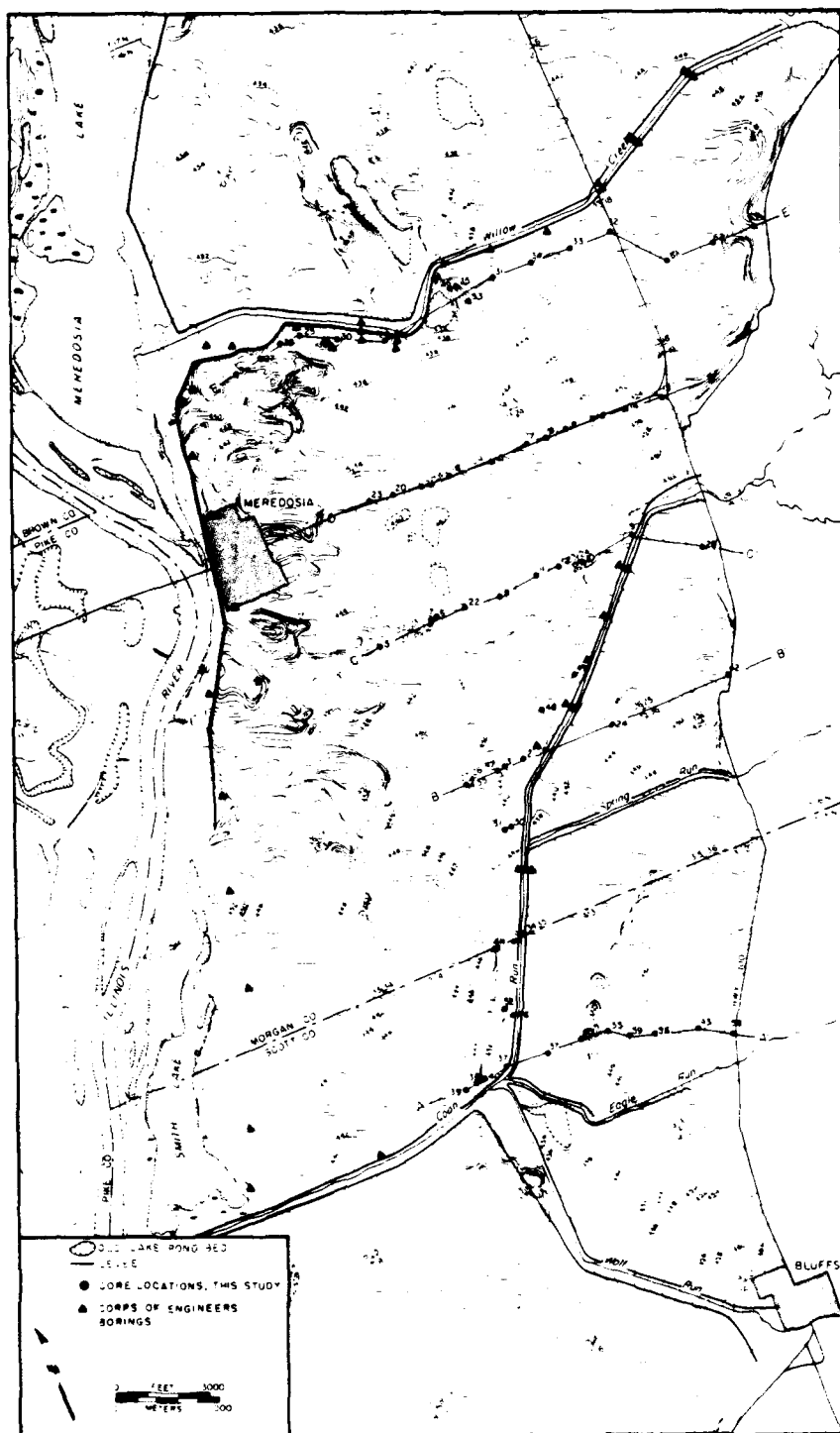


Figure 2. Location of core holes and cross sections, Meredosia Village District.



Figure 3. Location of core holes and cross sections, Meredosia Lake District.

penetrate gravels and some sands, nor can it retrieve saturated sediments not sufficiently cohesive to hold an open hole while the tube is retracted and being emptied. The latter condition was not a problem and most cores were terminated due to refusal on pebbly sand or sand.

After coring, a limited surface survey for archeological material was conducted within approximately 6 m (20 ft) of the core hole. The purpose of the surface survey was to determine presence or absence of archeological sites. The surface survey was not intended to determine specific parameters of any site discovered, and only diagnostic or unique material was to be collected.

Evaluation of potential sediment/soil core hole locations necessitated consideration of the following aims: 1) construction of valley cross-sections; 2) identification of subsurface sediments and sedimentary relationships; 3) tracing of terraces and deposits of known age and origin; and 4) sampling of a variety of soil types and floodplain geomorphic features. Fifty percent of the cores in the Meredosia Levee and Drainage Districts were required to be taken within a corridor paralleling the main and lateral levees (see Scope of Work, Appendix D). Crop cover and problems with obtaining access necessarily restricted coring in some preferred locations. Core locations were selected with the aid of black and white, and color aerial photographs, topographic maps, soil series maps and information obtained from preceeding cores. Core hole and cross-section locations are indicated on Figures 2 and 3 and listed with reference to the cadastral system in Table 1. Each core was examined in the field, briefly described, and wrapped in plastic wrap and aluminum foil for transport. More detailed descriptions were performed under uniform conditions in the field laboratory using standard USDA soil terminology (Soil Survey Staff, 1975). Because of time limitations, only depth, interval, color (moist Munsell), texture, structure and boundary were described. Although developed primarily for till and loess deposits, standard weathering zone terminology (Hallberg, Fenton and Miller, 1978) was useful in describing carbonates and oxidation state (see Appendix A for an explanation of the terms "oxidized", "deoxidized", and "unoxidized"). Engineering textural descriptions (U.S. Army Engineer

Table 1. Core Location, Landscape Position, and Associated SCS Soil, Meredosie Village and Meredosie Lake Districts.

Core	Location	Landscape Position	Elevation (m)	Elevation (ft.)	Mapped Soil Series	Core Depth (m)
MLC-01	SE1/4 SE1/4 SW1/4 Sec26 T16N R13W	distal alluvial fan	134.1	440	Dupo silt loam	4.80
MLC-02	SW1/4 SE1/4 SW1/4 Sec26 T16N R13W	Bug Island channel	133.8	439	Ambraw clay loam	6.00
MLC-03	SE1/4 SW1/4 SW1/4 Sec26 T16N R13W	Bug Island channel	134.1	440	Ambraw clay loam	6.00
MLC-04	NE1/4 NE1/4 NE1/4 Sec26 T16N R13W	Bluffs terrace	134.7	442	Hoopeston sandy loam	4.23
MLC-05	NE1/4 NE1/4 NE1/4 Sec27 T16N R13W	Bluffs terrace	134.4	441	Hoopeston sandy loam	4.80
MLC-06	SE1/4 SW1/4 SW1/4 Sec23 T16N R13W	Bug Island channel	134.1	440	Darwin silty clay	3.60
MLC-07	SE1/4 SW1/4 SW1/4 Sec23 T16N R13W	Bluffs terrace (edge)	134.7	442	LaHogue sandy loam	5.20
MLC-08	NE1/4 NE1/4 NE1/4 Sec26 T16N R13W	distal alluvial fan	135.9	446	Littleton silt loam	4.25
MLC-09	SE1/4 SE1/4 SW1/4 Sec24 T16N R13W	medial alluvial fan	139.0	456	Dupo silt loam	8.15
MLC-10	NE1/4 NE1/4 NE1/4 Sec26 T16N R13W	medial alluvial fan	138.1	453	Dupo silt loam	7.80
MLC-11	SW1/4 SE1/4 SE1/4 Sec23 T16N R13W	medial alluvial fan	136.9	449	Dupo silt loam	7.20
MLC-12	SE1/4 SE1/4 SE1/4 Sec23 T16N R13W	medial alluvial fan	137.5	451	Littleton silt loam	8.00
MLC-13	NE1/4 SE1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	135.6	445	Worthen silt loam	6.08
MLC-14	NE1/4 SW1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	138.4	454	Littleton silt loam	7.40
MLC-15	SE1/4 NE1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	137.8	452	Littleton silt loam	6.95
MLC-16	SW1/4 NE1/4 NE1/4 Sec23 T16N R13W	distal alluvial fan	135.0	443	Worthen silt loam	9.80
MLC-17	SW1/4 NE1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	135.0	443	Worthen silt loam	5.30
MLC-18	SE1/4 NE1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	138.1	453	Worthen silt loam	7.70
MLC-19	SE1/4 NE1/4 NE1/4 Sec24 T16N R13W	medial alluvial fan	136.9	449	Worthen silt loam	7.20
MLC-20	SW1/4 NE1/4 NE1/4 Sec23 T16N R13W	Bug Island channel	134.4	441	LaHogue sandy loam	8.00
MLC-21	SW1/4 NE1/4 NE1/4 Sec23 T16N R13W	distal alluvial fan/ Bug Island channel				
MLC-22	SW1/4 SE1/4 SW1/4 Sec23 T16N R13W	distal alluvial fan/ Bug Island channel	134.7	442	Worthen silt loam	
MLC-23	SW1/4 NE1/4 NE1/4 Sec23 T16N R13W	Bluffs terrace	134.7	442	LaHogue sandy loam	3.20
MLC-24	SE1/4 SE1/4 SE1/4 Sec26 T16N R13W	medial alluvial fan	134.7	442	LaHogue sandy loam	5.50
MLC-25	NE1/4 NE1/4 NE1/4 Sec15 T16N R13W	Bug Island channel	132.3	434	Beaucoup silty clay loam	4.00
MLC-26	NE1/4 NE1/4 NE1/4 Sec15 T16N R13W	Bluffs terrace	134.7	442	Alvin fine sandy loam	3.20
MLC-27	NE1/4 NE1/4 NE1/4 Sec15 T16N R13W	Bath Terrace	135.3	444	Plainfield loamy fine sand	2.84
MLC-28	SE1/4 NE1/4 NE1/4 Sec25 T16N R13W	medial alluvial fan	190.8	462	Worthen silt loam	8.10
MLC-29	SE1/4 NE1/4 NE1/4 Sec14 T16N R13W	Bug Island channel	132.2	437	Tice silty clay loam	6.00
MLC-30	SW1/4 NE1/4 NE1/4 Sec14 T16N R13W	Bug Island channel	132.3	434	Darwin silty clay	3.00
MLC-31	SW1/4 NE1/4 NE1/4 Sec13 T16N R13W	distal alluvial fan/ Bug Island channel				
MLC-32	SE1/4 NE1/4 NE1/4 Sec13 T16N R13W	distal alluvial fan	134.1	440	Beaucoup silty clay loam	6.00
MLC-33	SE1/4 NE1/4 NE1/4 Sec13 T16N R13W	distal alluvial fan	134.4	441	Beaucoup silty clay loam	7.80
MLC-34	SE1/4 NE1/4 NE1/4 Sec13 T16N R13W	distal alluvial fan	134.1	440	Beaucoup silty clay loam	3.30
MLC-35	SW1/4 NE1/4 NE1/4 Sec13 T16N R13W	Bug Island channel	134.1	440	Beaucoup silty clay loam	5.80
MLC-36	SE1/4 NE1/4 NE1/4 Sec14 T16N R13W	sand dune	134.7	442	Sparta loamy sand	6.00
MLC-37	SE1/4 SE1/4 NE1/4 Sec14 T16N R13W	Bath Terrace	135.3	444	Sparta loamy sand	2.40
MLC-38	SW1/4 SW1/4 NE1/4 Sec 4 T15N R13W	Bug Island channel	132.9	436	Wakeland silt loam	4.80
MLC-39	SW1/4 SW1/4 NE1/4 Sec 4 T15N R13W	Bath Terrace	135.3	444	Sparta loamy sand	1.70
MLC-40	SE1/4 SE1/4 NE1/4 Sec 4 T15N R13W	Bath Terrace	135.6	445	Sparta loamy sand	1.80
MLC-41	NE1/4 SW1/4 NE1/4 Sec 4 T15N R13W	W. edge of Bug Island channel	132.9	436	Ambraw clay loam	1.94
MLC-42	SE1/4 SW1/4 NE1/4 Sec23 T16N R13W	medial alluvial fan	136.2	447	Worthen silt loam	7.20
MLC-43	NE1/4 SE1/4 SW1/4 Sec25 T16N R13W	medial alluvial fan	139.0	456	Littleton silt loam	7.20
MLC-44	NE1/4 NE1/4 NE1/4 Sec 3 T15N R13W	medial alluvial fan	142.3	467	Worthen silt loam	10.15
MLC-45	NE1/4 NE1/4 NE1/4 Sec 4 T15N R13W	Bath Terrace	135.3	444	Sparta loamy sand	1.50
MLC-46	NE1/4 NE1/4 NE1/4 Sec 4 T15N R13W	Bug Island channel	132.9	436	Wakeland silt loam	3.50
MLC-46	NE1/4 SE1/4 NE1/4 Sec 4 T15N R13W	Bug Island channel	139.9	436	Wakeland silt loam	7.80

Table 1 (continued)

Cut	Location	Landscape Position	Elevation (m)	Elevation (ft.)	Mapped Soil Series	Core Depth
MLC-47	SE1/4 SW1/4 SW1/4 Sec26 T16N R13W	Bluffs terrace	134.7	442	Hoopeston sandy loam	2.30
MLC-48	NW1/4 SE1/4 SW1/4 Sec26 T16N R13W	distal alluvial fan	135.3	444	Dupo silt loam	7.20
MLC-49	NW1/4 SE1/4 SW1/4 Sec26 T16N R13W	medial alluvial fan	135.3	444	Dupo silt loam	6.60
MLC-50	NW1/4 SW1/4 NW1/4 Sec35 T16N R13W	Bug Island channel	133.5	438	Ambraw clay loam	7.20
MLC-51	NW1/4 SW1/4 NW1/4 Sec35 T16N R13W	Bluffs terrace (edge)	134.1	440	Orlo sandy loam	2.08
MLC-52	NE1/4 SW1/4 NW1/4 Sec 4 T15N R13W	Bath terrace (edge)	134.7	442	Sparta loamy sand	1.58
MLC-53	NW1/4 SW1/4 NW1/4 Sec 3 T16N R13W	sand dune	134.7	442	Sparta loamy sand	4.80
MLC-54	NE1/4 NE1/4 NW1/4 Sec 5 T16N R13W	Bath terrace	136.9	449	Plainfield sand	1.80
MLC-55	NW1/4 NE1/4 SW1/4 Sec 4 T15N R13W	distal alluvial fan	136.2	447	Worthen silt loam	5.30
MLC-56	NW1/4 NE1/4 SE1/4 Sec 3 T15N R13W	medial alluvial fan	137.2	450	Worthen silt loam	8.40
MLC-57	NE1/4 NE1/4 SW1/4 Sec 4 T15N R13W	Bug Island channel	132.9	436	Dupo silt loam	7.20
MLC-58	NW1/4 NW1/4 SE1/4 Sec 3 T15N R13W	Apex, alluvial fan	144.8	475	Worthen silt loam	12.30
MLC-59	NE1/4 NE1/4 SE1/4 Sec 4 T15N R13W	medial alluvial fan	136.2	447	Littleton silt loam	5.70
MLC-60	NE1/4 NW1/4 SE1/4 Sec 4 T15N R13W	Bug Island channel (edge)	132.3	434	Landes fine sandy loam	4.80
MLC-61	NE1/4 NW1/4 SW1/4 Sec18 T16N R12W	medial alluvial fan	135.3	444	Coffeen silt loam	6.00
MLC-62	NW1/4 NW1/4 SE1/4 Sec18 T16N R12W	medial alluvial fan	135.6	445	Dupo silt loam	6.00
MLC-63	NW1/4 NE1/4 SE1/4 Sec18 T16N R12W	medial alluvial fan	190.2	460	Worthen silt loam	6.80
DLC-01	SW1/4 SE1/4 SW1/4 Sec36 T17N R13W	Bug Island channel	132.9	436	Ambraw clay loam	4.80
DLC-02	SW1/4 SW1/4 SW1/4 Sec36 T17N R13W	dune on Bath terrace edge	133.5	438	Sparta loamy sand	6.80
DLC-03	SE1/4 SW1/4 SE1/4 Sec35 T17N R13W	Bug Island channel	132.6	435	Ambraw clay loam	6.90
DLC-04	SW1/4 SW1/4 SW1/4 Sec31 T17N R13W	dune on Bath terrace edge	132.9	436	Ambraw clay loam	6.75
DLC-05	SW1/4 SW1/4 SE1/4 Sec35 T17N R13W	Bug Island channel	132.3	434	Tice silty clay loam	5.50
DLC-06	SE1/4 SE1/4 SW1/4 Sec35 T17N R13W	relict Illinois River natural levee	132.3	434	Ambraw clay loam	
DLC-07	SW1/4 SW1/4 SW1/4 Sec35 T17N R13W	relict Illinois River natural levee	132.3	434	Ambraw clay loam	
DLC-08	SE1/4 SE1/4 SW1/4 Sec36 T17N R13W	Bluffs terrace(?)	133.2	437	Dickenson fine sandy loam	9.60
DLC-09	SE1/4 SE1/4 SE1/4 Sec26 T17N R13W	Bug Island channel	134.7	442	Sparta loamy sand	6.00
DLC-10	SW1/4 SW1/4 SW1/4 Sec25 T17N R13W	Bug Island channel	131.1	430	Ambraw clay loam	6.30
DLC-11	SE1/4 SW1/4 SW1/4 Sec25 T17N R13W	Bug Island channel	132.0	433	Dickenson fine sandy loam	5.60
DLC-12	SE1/4 SW1/4 SW1/4 Sec25 T17N R13W	Bug Island channel	132.9	436	Dickenson fine sandy loam	5.75
DLC-13	SW1/4 SE1/4 SW1/4 Sec25 T17N R13W	Bug Island channel	132.0	433	Dickenson fine sandy loam	5.50
DLC-14	SE1/4 SE1/4 SW1/4 Sec25 T17N R13W	Bug Island channel lower slope of Bluffs terrace scarp	131.1	430	Beaucoup silty clay loam	4.50
DLC-15	NW1/4 NW1/4 NE1/4 Sec36 T17N R13W	dune on Bluffs terrace	132.9	436	Plainfield loamy sand	
DLC-16	NW1/4 NW1/4 NE1/4 Sec36 T17N R13W	Bug Island channel	136.2	447	Plainfield loamy sand	5.50
DLC-17	NW1/4 SE1/4 NE1/4 Sec30 T17N R12W	Indian Creek floodplain	134.7	442	Plainfield loamy sand	7.00
DLC-18	NE1/4 SE1/4 NW1/4 Sec30 T17N R12W	Indian Creek floodplain	135.3	444	Sawmill silty clay loam	8.40
DLC-19	NE1/4 NW1/4 SE1/4 Sec29 T17N R12W	Indian Creek floodplain	135.3	444	Confrey clay loam	9.60
DLC-20	NE1/4 NE1/4 NE1/4 Sec36 T17N R13W	Bug Island channel	136.6	448	Sparta loamy sand	7.60
DLC-21	SE1/4 SW1/4 SE1/4 Sec25 T17N R13W	Bug Island channel	133.5	438	Raddle silt loam	4.80
DLC-22	NW1/4 NW1/4 NW1/4 Sec31 T17N R12W	Bug Island channel	134.1	440	Raddle silt loam	6.00
DLC-23	NE1/4 NE1/4 NE1/4 Sec 1 T16N R13W	Bath terrace scarp	134.4	441	Watseka loamy sand	7.20
DLC-24	NW1/4 NW1/4 SE1/4 Sec19 T17N R12W	Bluffs terrace (?)	134.7	442	Watseka loamy sand	4.80
DLC-25	SE1/4 NE1/4 NE1/4 Sec24 T17N R13W	Bug Island channel	132.3	434	Carwin silty clay	7.20
DLC-26	SW1/4 SE1/4 NE1/4 Sec24 T17N R13W	Bluffs terrace	134.7	442	Dickenson fine sandy loam	7.20
DLC-27	SE1/4 SE1/4 NE1/4 Sec24 T17N R13W	Bluffs terrace	133.5	438	Littleton silt loam	6.00
DLC-28	SW1/4 SE1/4 NE1/4 Sec24 T17N R13W	Bluffs terrace	134.1	440	Raddle silt loam	7.00
		dune on Bluffs terrace	135.0	443	Dickenson fine sandy loam	7.20

Table 1 (continued)

Core	Location		Landscape Position	Elevation (m)	Mapped Soil Series	Core Depth
DLC-29	NE1/4 NW1/4	SE1/4 Sec24 T17N R13W	Bluffs terrace	134.1	Orlo loam	6.00
DLC-30	SW1/4 SW1/4	N31/4 Sec24 T17N R13W	dune on Bluffs terrace	135.9	Plainfield loamy sand	7.20
DLC-31	NW1/4 NW1/4	SW1/4 Sec18 T17N R12W	Bluffs terrace	134.4	Alvin fine sandy loam	8.80
DLC-32	NW1/4 NW1/4	SW1/4 Sec18 T17N R12W	Bug Island channel	132.6	Beaucoup silty clay loam	7.20
DLC-33	NW1/4 NE1/4	NE1/4 Sec18 T17N R12W	Bug Island channel	131.4	Beaucoup silty clay loam	7.80
DLC-34	NW1/4 NE1/4	SW1/4 Sec18 T17N R12W	Bug Island channel	132.3	Beaucoup silty clay loam	6.90
DLC-35	NW1/4 NW1/4	SW1/4 Sec18 T17N R12W	dune on Bluffs terrace	137.5	Plainfield loamy sand	4.20
DLC-36	NE1/4 NE1/4	Sec 5 T16N R12W	medial alluvial fan	140.2	Plainfield loamy sand	6.00
DLC-37	NW1/4 NE1/4	SE1/4 Sec13 T17N R13W	dune on Bluffs terrace	135.3	Plainfield loamy sand	7.20
DLC-38	NE1/4 NW1/4	NE1/4 Sec25 T17N R13W	Bug Island channel	132.6	Riddle silt loam	7.20
DLC-39	SE1/4 NW1/4	NE1/4 Sec 1 T16N R13W	Indian Creek alluvium	135.9	Worthen silt loam	5.50
DLC-40	NW1/4 SW1/4	SE1/4 Sec 1 T16N R13W	Indian Creek alluvium	134.1	Beaucoup silty clay loam	7.20
DLC-41	NW1/4 SW1/4	NE1/4 Sec 1 T16N R13W	dune on Bluffs terrace	135.6	Plainfield loamy sand	4.80
DLC-42	SE1/4 SE1/4	NE1/4 Sec24 T17N R13W	lower slope of Bluffs terrace scarp	132.3	Beardstown loam	
DLC-43	NW1/4 NW1/4	SE1/4 Sec13 T17N R13W	Indian Creek floodplain	131.7	Dockery silt loam	9.30
DLC-44	SW1/4 NW1/4	SE1/4 Sec13 T17N R13W	Indian Creek floodplain	131.7	Dockery silt loam	6.50
DLC-45	SW1/4 SE1/4	NW1/4 Sec19 T17N R12W	Bug Island channel	131.7	Darwin silty clay	4.80
DLC-46	SE1/4 SE1/4	NW1/4 Sec19 T17N R12W	Bluffs terrace	134.1	Sparta loamy sand	4.80
DLC-47	NW1/4 SE1/4	SW1/4 Sec19 T17N R12W	Bug Island channel	131.7	Darwin silty clay	3.00
DLC-48	SW1/4 SE1/4	NW1/4 Sec19 T17N R12W	Bug Island channel	131.7	Darwin silty clay	6.00
DLC-49	NW1/4 SE1/4	NE1/4 Sec30 T17N R12W	dune on Bath (?) Terrace	136.6	Plainfield loamy sand	7.20
DLC-50	SW1/4 NW1/4	NE1/4 Sec11 T16N R13W	dune on Bluffs terrace	135.6	Sparta loamy sand	7.70
DLC-51	SE1/4 SE1/4	SW1/4 Sec 6 T16N R12W	dune on Bluffs terrace	135.3	Sparta loamy sand	6.00
DLC-52	SW1/4 SW1/4	SW1/4 Sec 6 T16N R12W	Indian Creek alluvium	135.3	Worthen silt loam	4.60
DLC-53	NW1/4 NW1/4	SE1/4 Sec 7 T17N R12W	Indian Creek alluvium	135.0	Tice silty clay loam	6.00
DLC-54	NE1/4 SW1/4	SE1/4 Sec 1 T16N R13W	Indian Creek alluvium	134.4	Worthen silt loam	4.80
DLC-55	NE1/4 NW1/4	NW1/4 Sec 8 T16N R12W	distal alluvial fan	137.5	Worthen silt loam	6.00
DLC-56	NE1/4 SE1/4	SW1/4 Sec19 T17N R12W	Bluffs terrace	135.6	Plainfield loamy sand	5.90
DLC-57	NE1/4 NE1/4	NW1/4 Sec30 T17N R12W	Bath Terrace	139.9	Plainfield loamy sand	5.70
DLC-58	SW1/4 NW1/4	NW1/4 Sec12 T16N R13W	dune on Bluffs terrace	135.9	Sparta loamy sand	9.05
DLC-59	SE1/4 SE1/4	SW1/4 Sec 1 T16N R13W	Indian Creek alluvium	133.8	Tice silty clay loam	8.40
DLC-60	NE1/4 NE1/4	NW1/4 Sec12 T16N R13W	Bug Island channel (old bed of Blue Pond)	132.6	Amraw clay loam	
DLC-61	NE1/4 SE1/4	SW1/4 Sec 1 T16N R13W	Bluffs terrace	134.4	Sparta loamy sand	6.00
DLC-62	SW1/4 NW1/4	NW1/4 Sec12 T16N R13W	Bug Island Channel	133.5	Amraw clay loam	6.00
DLC-63	NE1/4 SW1/4	NW1/4 Sec29 T17N R12W	dune on Bluffs terrace	137.5	Plainfield loamy sand	8.40
DLC-64	SE1/4 NW1/4	SW1/4 Sec 6 T16N R12W	Bluffs terrace	135.9	Orlo loam	7.20

Waterways Experiment Station, 1960) for major units were also recorded per request in the Scope of Work (Appendix D). Any special features or inclusions (organic matter, charcoal, gastropod and bivalve shells, krotovina, lithic debris) were noted. Various units were sampled, air dried and stored for future analyses of particle size, clay and sand mineralogy, carbonates, C-14 and identification of micro- and macro-botanical organic matter. Core descriptions are presented in Appendix A. Additional subsurface data were obtained from the Corps of Engineers, St. Louis District, Illinois Department of Transportation, and Illinois River maps (Woermann, 1904).

Although stratigraphic data derived from cores provides the primary data base, laboratory analyses were deemed necessary to begin to characterize lithostratigraphic units and verify field descriptions. Methods and procedures of chemical and physical analyses employed are considered standard for the evaluation of unconsolidated Quaternary sediments and soils in the midwest (Hallberg, 1978; 1980). Particle size analyses were completed using the method of Kilmer and Alexander (1949) as modified by Walter et al. (1978). Calcite and dolomite were determined gasometrically using the Chittick apparatus (Dreimanis, 1962). Values were calculated using the following empirical equations for the graphed lines of Dreimanis, as reported by Walter and Hallberg (1980):

$$\% \text{ calcite} = F (0.232)$$

$$\% \text{ dolomite} = E (0.223) + 0.3.$$

The values E and F are corrected volumetric readings of CO₂ for dolomite and calcite respectively. Chemical and physical data are tabulated in Appendix B.

Cross-sections and geomorphologic maps (see below) were constructed and interpreted by utilizing both new core hole descriptions and other previous boring records, black and white, and color aerial photographs, color infrared aerial imagery, topographic maps and soils data. Landowner interviews also provided valuable information on subsurface sediments as most farmers have excavated deep wells or have sunk sand points

on their property.

Because of the complex nature of fluvial sediments and the sampling intervals, cross-sections are generalized to some extent. Nevertheless, a clear stratigraphic picture emerges. All elevations are based on Illinois River floodplain topographic maps with 2 ft contour intervals (U.S. War Department, 1944) with vertical datum plane referred to 1929 General Adjustment USC & GS (Mean Sea Level). Spoil from drainage ditch construction since 1944 has been included in core descriptions, but was omitted and adjusted for in cross-sections.

MEREDOSIA VILLAGE AND MEREDOSIA LAKE GEOMORPHOLOGY

The Meredosia Districts differ from previously studied districts (Figure 1) because they encompass several geomorphic surfaces and features which are not represented in the southern half of the lower Illinois valley. Two previously defined terraces, the Bath Terrace (Wanless, 1957; Styles, 1984; Hajic, 1983b) and Bluffs Terrace (Hajic, 1983b; Styles, 1984) in part border unburied remnants of the Bug Island Paleo-channel, a broad, straight Illinois River paleochannel (Figures 4 and 5). Also represented are extensive alluvial fans and a broad range of alluvial features associated with tributary creeks which have traversed much of the Bug Island Paleochannel after abandonment by the Illinois River.

The Bath Terrace has almost a continuous cover of eolian dunes attaining elevations over 143 m (470 ft), but more commonly ranging between 139 m (455 ft) and 142 m (465 ft). Where dunes are absent, the sandy surface is at about 137 m (450 ft). One large Bath remnant extends the full length of the western side of the Meredosia Village District while two large remnants are preserved in the Meredosia Lake District.

Less obvious is the Bluffs Terrace which also has a primarily sandy surface, but may on occasion have a silt loam surface. It is found at elevations ranging from 133.5 m (438 ft) to 134.7 m (442 ft). The Bluffs Terrace sometimes has low eolian dunes or reworked dunes that may reach elevations of about 137.8 m (452 ft). Remnants are preserved adjacent to the east side of Bath Terrace remnants in both districts and as

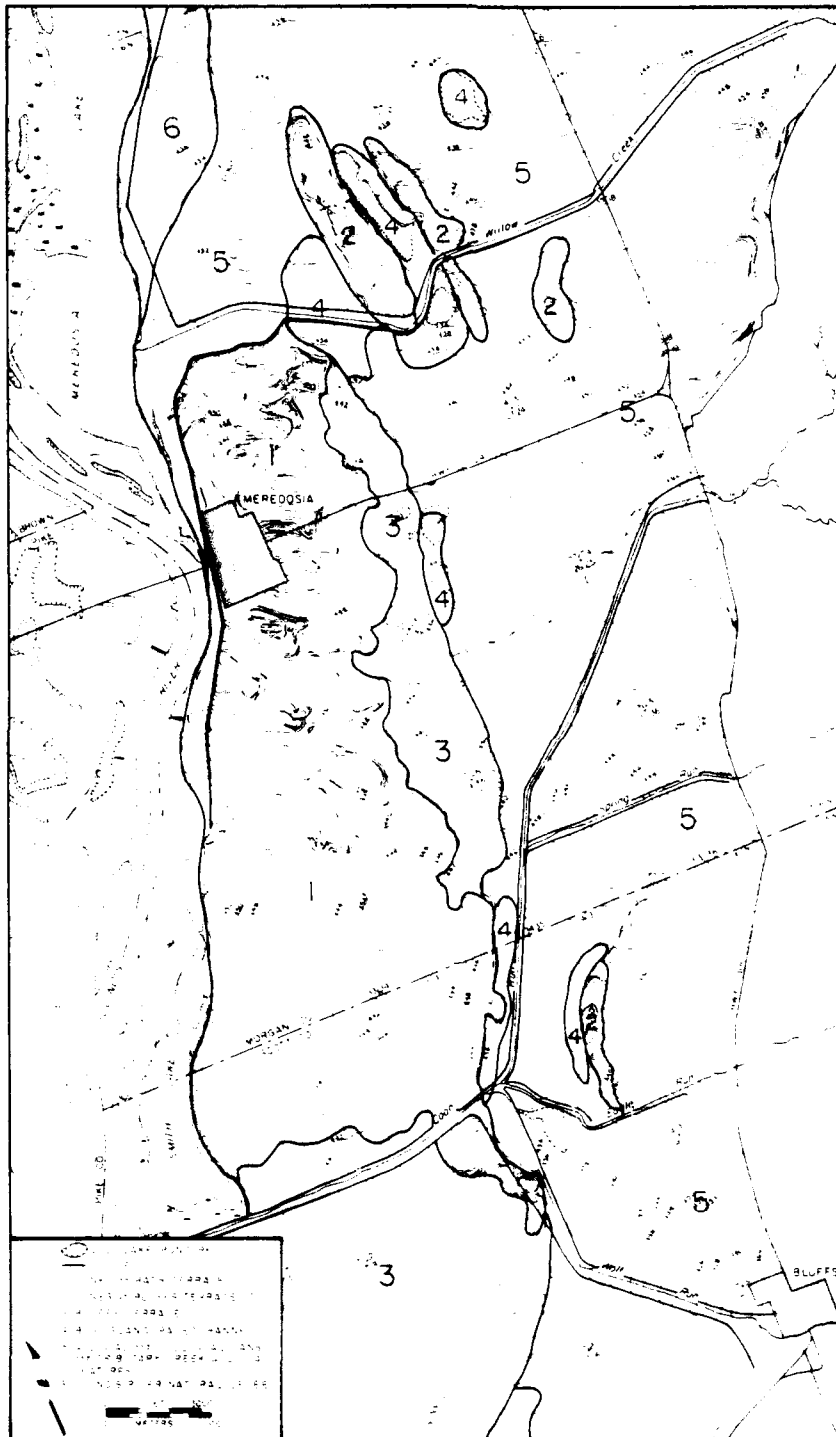


Figure 4. Geomorphology of the Meredosia Village District.



Figure 5. Geomorphology of the Meredosia Lake District.

isolated remnants in the Bug Island Paleochannel. The latter are relict channel bars or islands and generally have low eolian dunes associated with them. The boundary between the Bath and Bluffs terrace is at times indistinct, but generally mapped where large dunes occur on the Bath Terrace. North of the Meredosia Lake District and just south of Beardstown the Bluffs Terrace slopes up to and apparently merges with the Bath Terrace. The close association at the Bluffs terrace with the Bug Island Paleochannel suggests the Bluffs may be a related floodplain surface.

The Bug Island Paleochannel derives its name from one of the mid-channel bars/islands (now considered Bluffs Terrace remnants) that is approximately 4 km south of the triple junction of canalized Coon, Eagle and Wolf Run (Styles, 1984). One reach of the paleochannel is located in the two districts and extends their lengths (Figures 4 and 5). In the Meredosia Village District, the paleochannel is located between the eastern bluffline and Bath and Bluffs remnants. Terrace remnants bound either side of the paleochannel in the Meredosia Lake District (Figure 5). On high altitude aerial photographs, the paleochannel appears at least 8 to 10 times the width of the present Illinois River channel.

In the Meredosia Village District, most of the Bug Island Paleochannel has been filled by a broad apron of coalescing yet distinct alluvial fans. Major fans occur at the mouths of Wolf Run, Eagle Run, Spring Run, and Coon Run. The westward extent of Eagle Run fan has been restricted by a Bluffs terrace remnant. Tributary creek channel traces on the fans exhibit both braided and meandering patterns. At times, the larger creeks extended beyond their fans and eventually terminated in small splays and distributary networks probably in shallow lakes, in the Bug Island Paleochannel.

In the Meredosia Lake Levee and Drainage District, much of the paleochannel has been modified by fluctuating courses of Willow Creek and Indian Creek. Indian Creek is now diverted and forms the northern district boundary. In past times it flowed south on the east side of a large Bath Terrace remnant, then west and to the north of a large channel

bar/island (Figure 5). Meandering channel traces of Indian Creek are clear in high altitude aerial photographs and may have reworked some Bluffs terrace remnant margins east of Highway 100 (Figure 5). Willow Creek has been similarly active, reworking much of the Bug Island Paleo-channel between canalized Willow Creek and the Cass-Morgan county line. The resulting landscape in this area is a low hummocky topography of infilled channels, low natural levees and bars.

Along the eastern margin of Meredosia Lake is either a natural levee remnant deposited by a former Illinois River or an eroded Bluffs terrace remnant (Figure 5).

Major soils (those formed over largest areas) (Figures 6 and 7; Table 2) on the Bath Terrace are the Plainfield sand and Sparta loamy sand. These reflect the largely dune mantled terrace surface. While sharing some soil similarities, the Bluffs Terrace also has Keomah silt loam, Hoopeston sandy loam, Orio silt loam, and even some Ambraw clay loam in depressional areas. Major soils in the Bug Island channel, where not buried by upland derived sediments, include Darwin silty clay, Beaucoup silty clay loam and Ambraw clay loam. Worthen and Littleton (Table 2) silt loams dominate the proximal and medial alluvial fans and reflect the upland origin of the sediment. Dupon silt loam is mapped on distal fans where upland derived sediments are thin and underlying Bug Island Paleochannel sediments may be incorporated in the lower soil profile. Grouping the soils by texture (Table 2) illustrates a close correspondence to the geomorphology of the districts (Figures 6 and 7).

STRATIGRAPHY

Eight lithostratigraphic units were defined on physical criteria observed in cores. Eight valley cross-sections illustrate stratigraphic relationships of these units and shallow subsurface valley structure in the Meredosia Village and Meredosia Lake Levee and Drainage Districts (Figures 8-15).

Unit 1. This unit consists of oxidized and leached loamy fine sand to pebbly medium and coarse sand with depth. In the surface soil, tex-

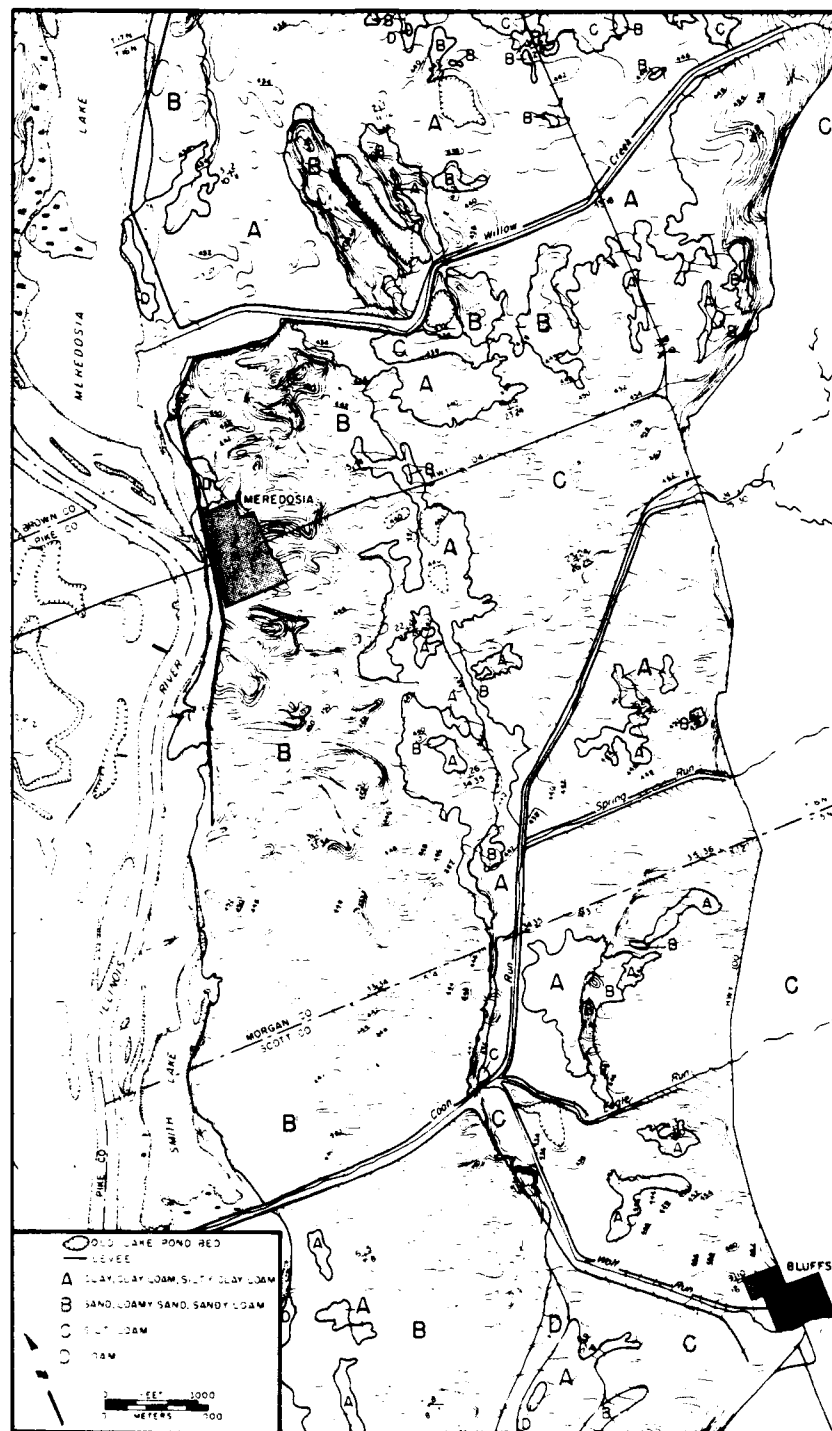


Figure 6. General soil groupings by texture within the Meredosia Village District.

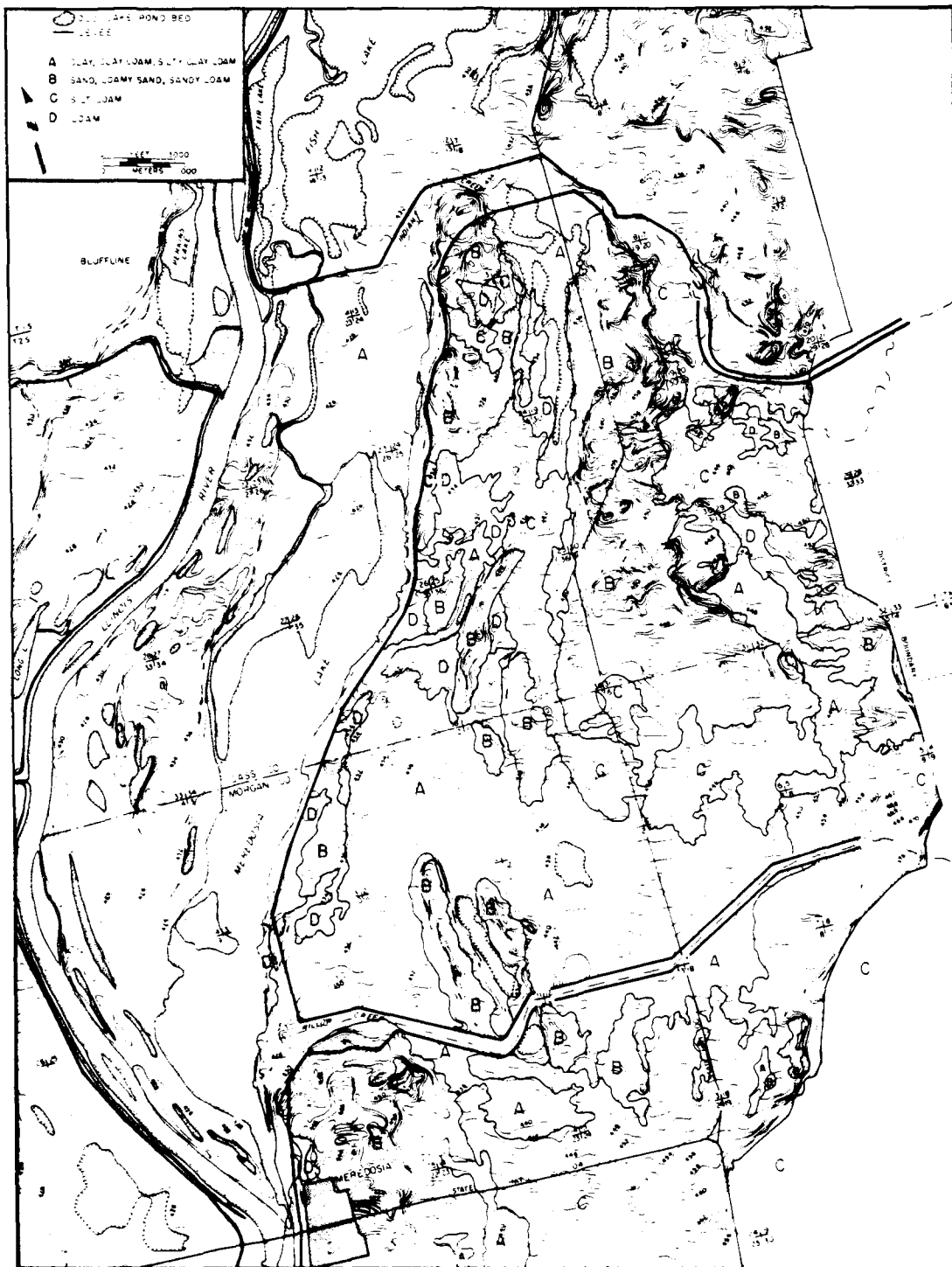


Figure 7. General soil groupings by texture within the Meredosia Lake District.

Table 2. Soils Groups by Texture.

<u>Texture</u>	<u>Soil Series</u>
clay, clay loam, silty clay loam, silty clay, muck	Houghton Palms Ambraw Beaucoup Sawmill Tice Darwin
silt loam	Arenzville Dupo Keomah Littleton Orio Raddle Tallula Thorp Wagner Worthen
loam	LaHogue Medway Ross
sand, loamy sand, sandy loam	Watseka Sparta Hoopeston Onarga Gilford Plainfield Bloomfield Morocco

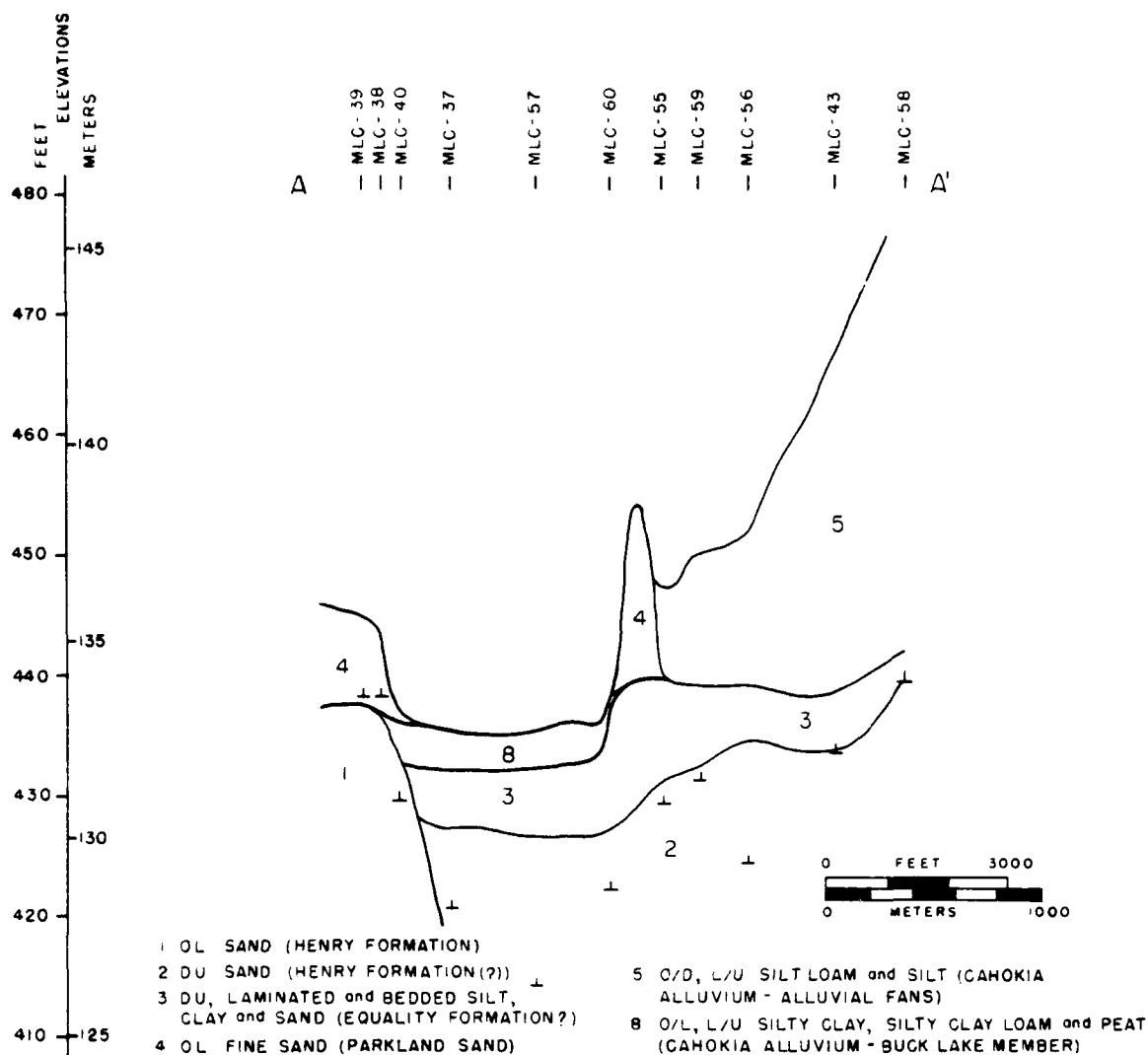


Figure 8. Meredosia Village cross-section A-A'.

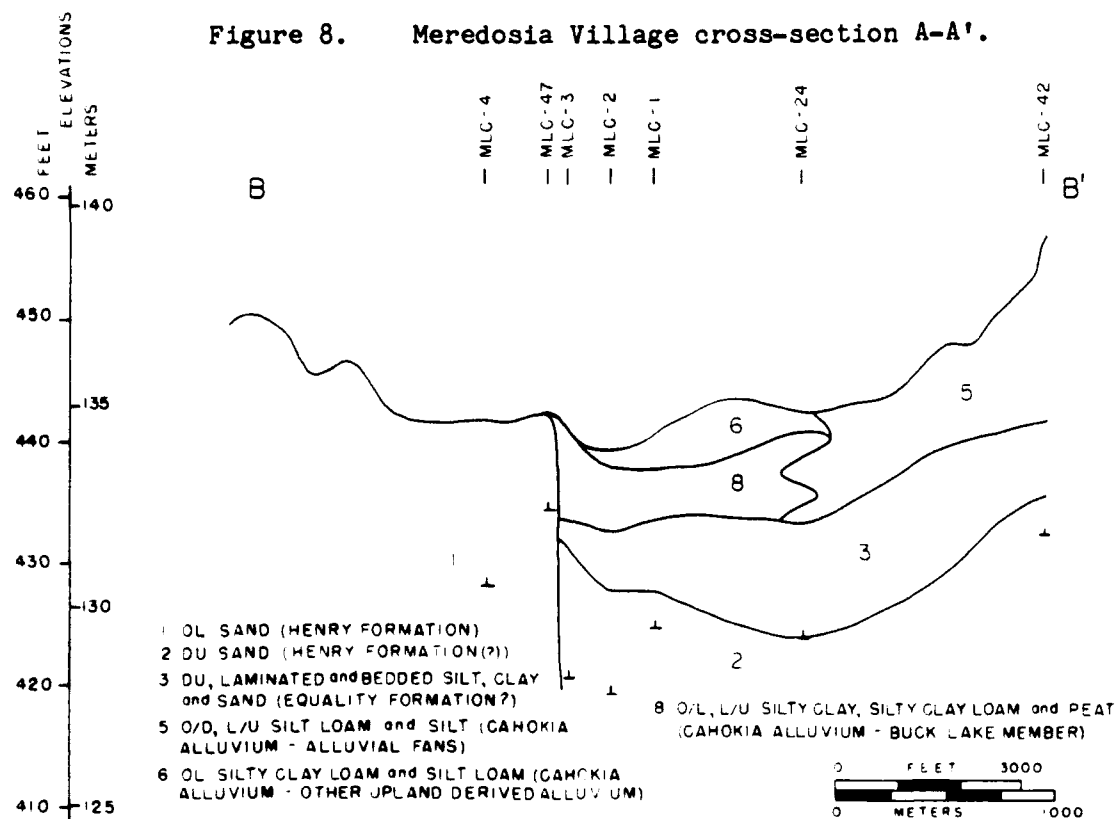


Figure 9. Meredosia Village cross-section B-B'.

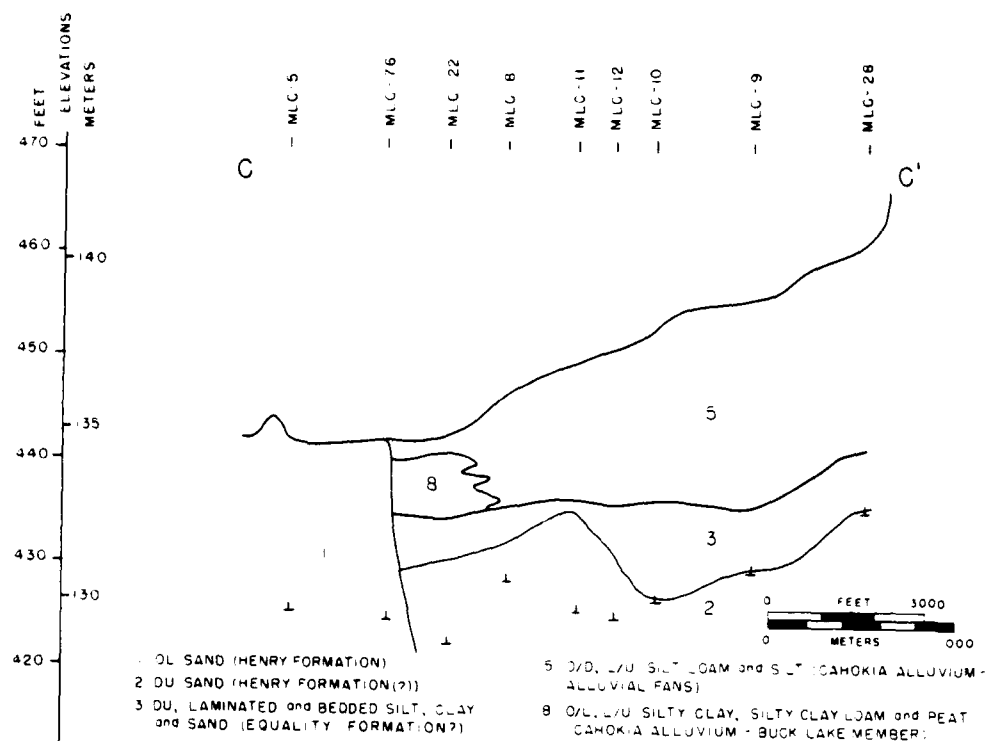


Figure 10. Meredosia Village cross-section C-C'.

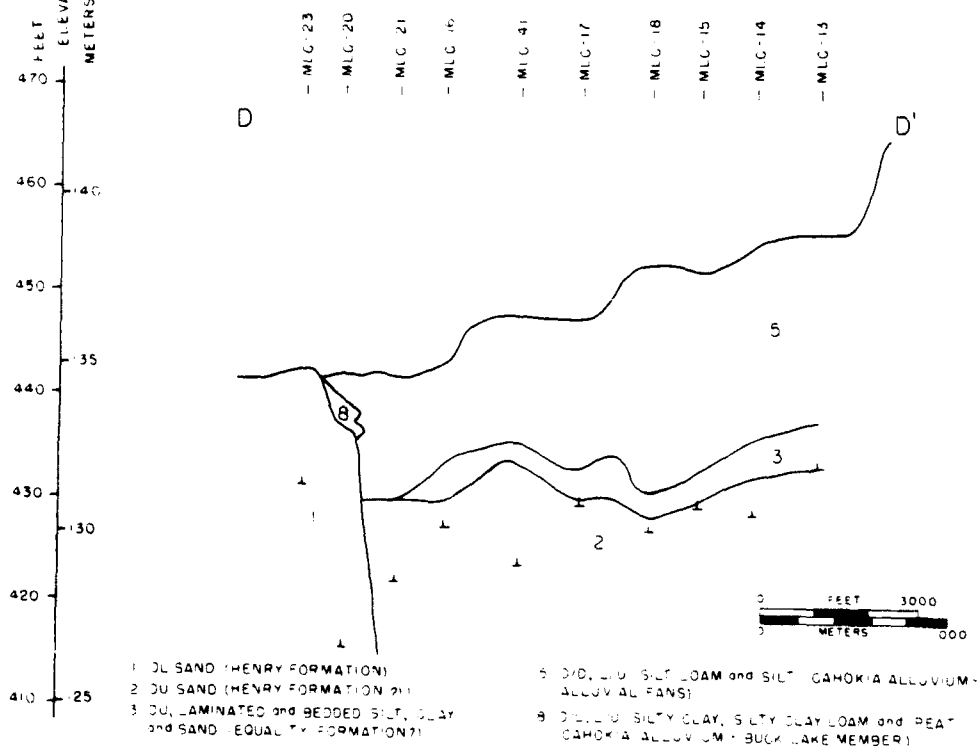


Figure 11. Meredosia Village cross-section D-D'.

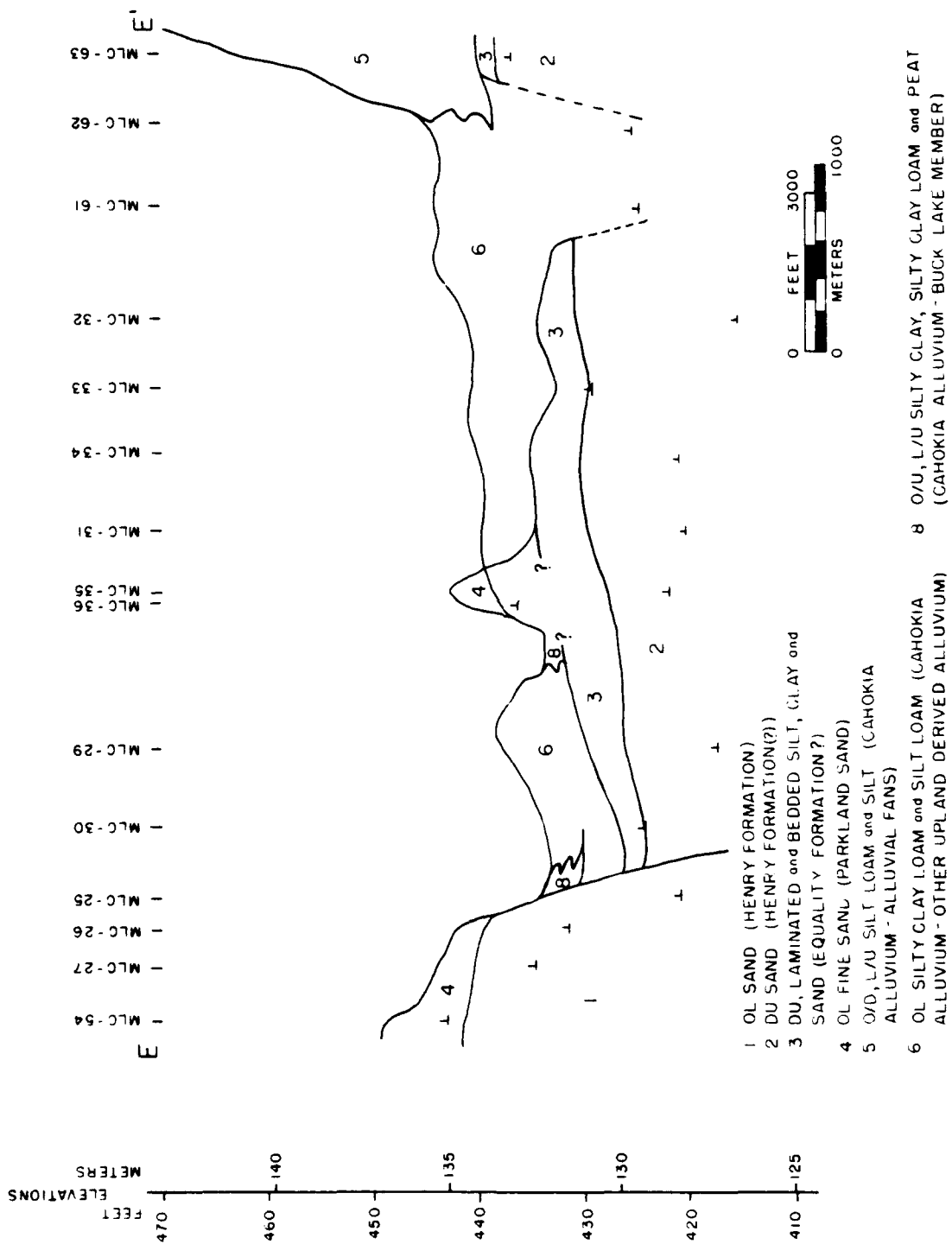


Figure 12. Meredosia Village cross-section E-E'.

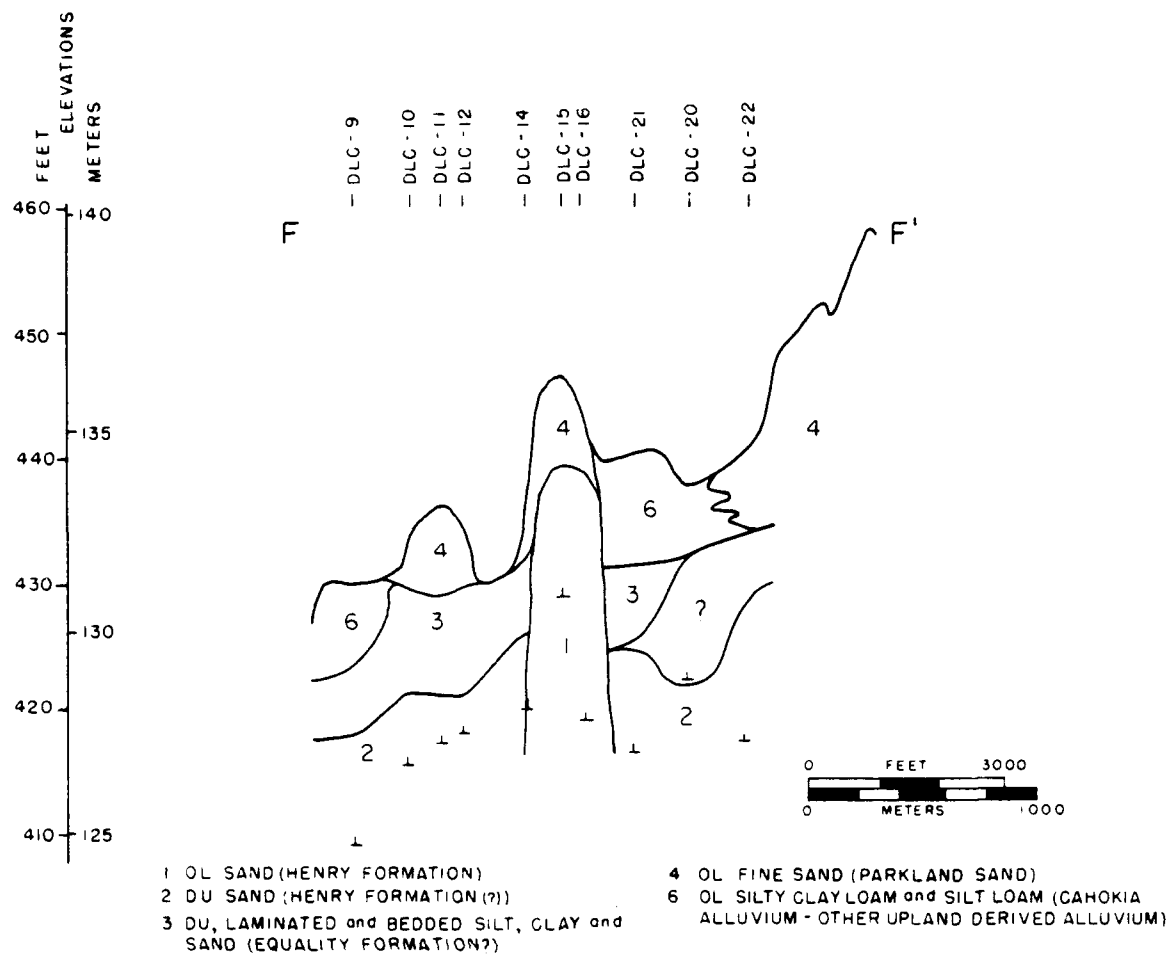


Figure 13. Meredosia Lake cross-section F-F'.

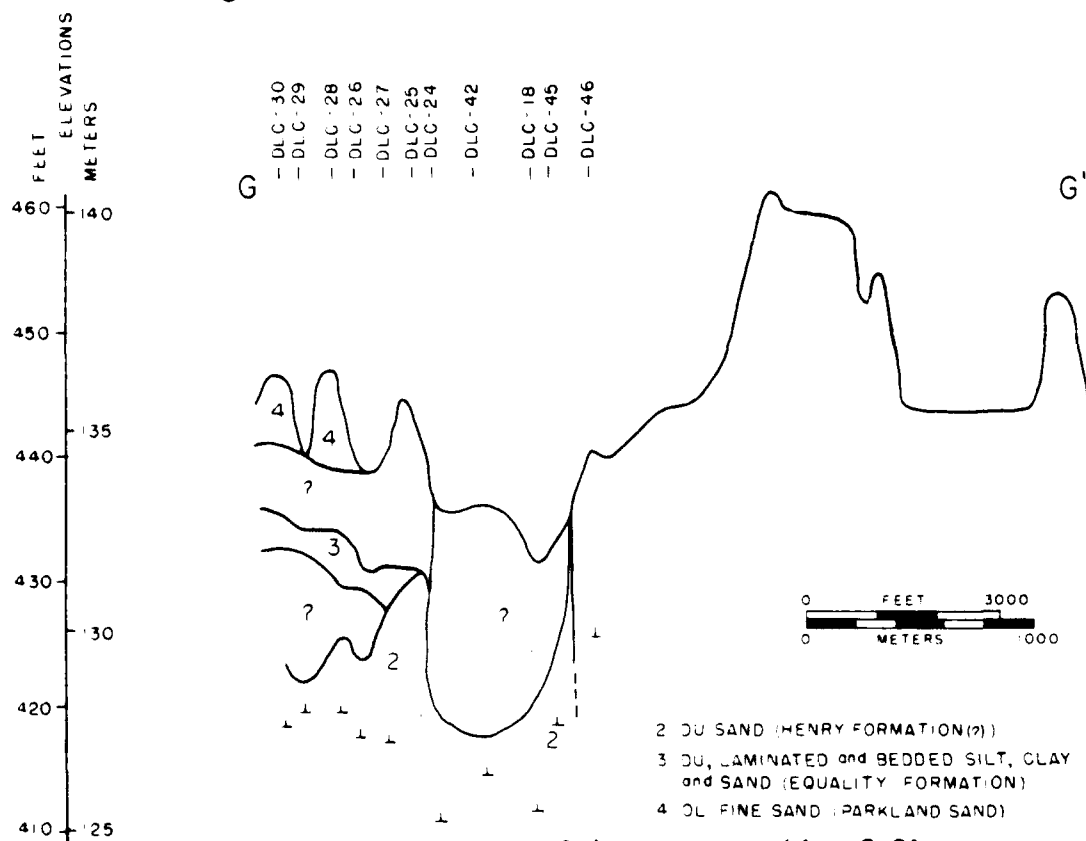


Figure 14. Meredosia Lake cross-section G-G'.

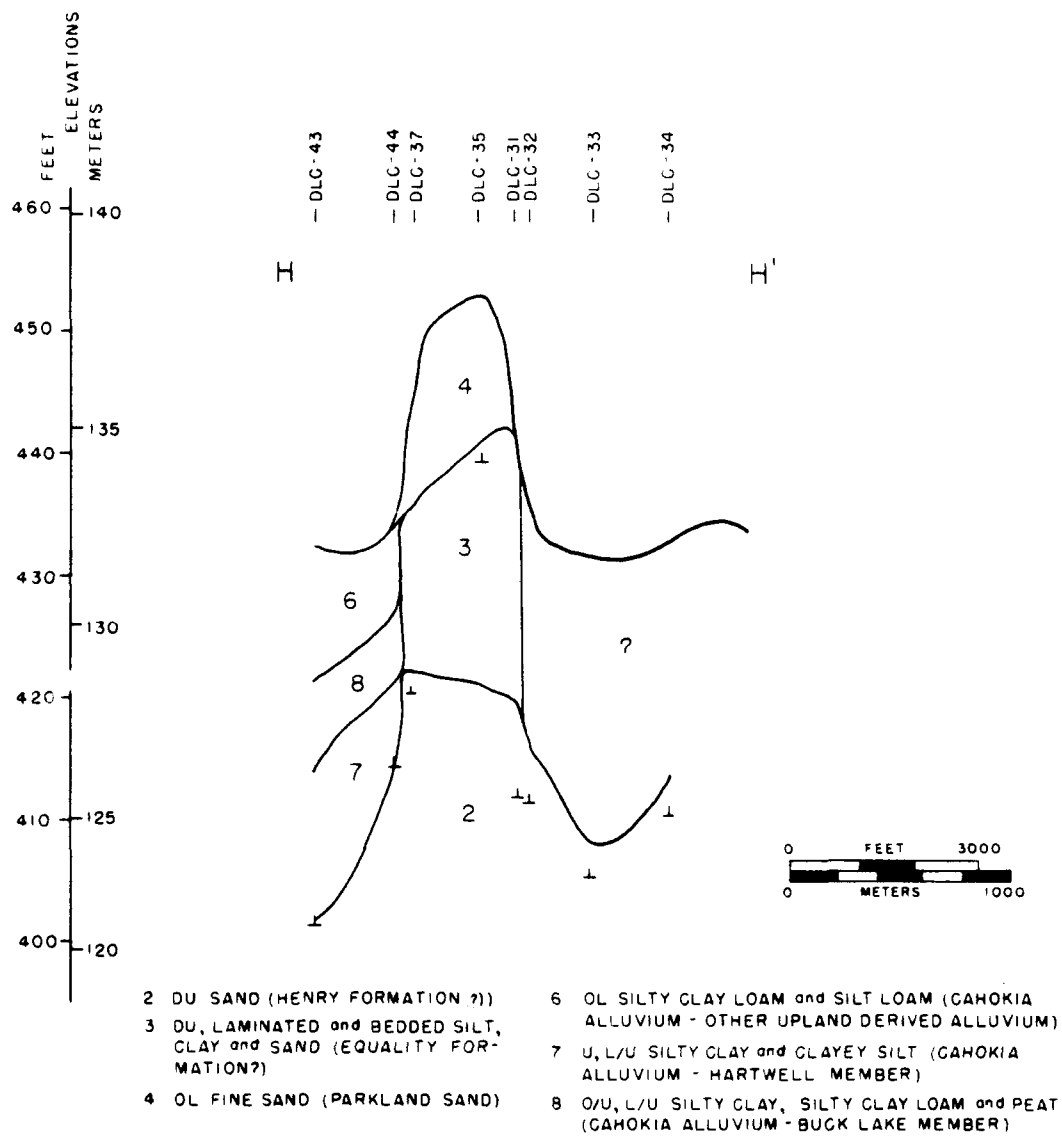


Figure 15. Meredosia Lake cross-section H-H'.

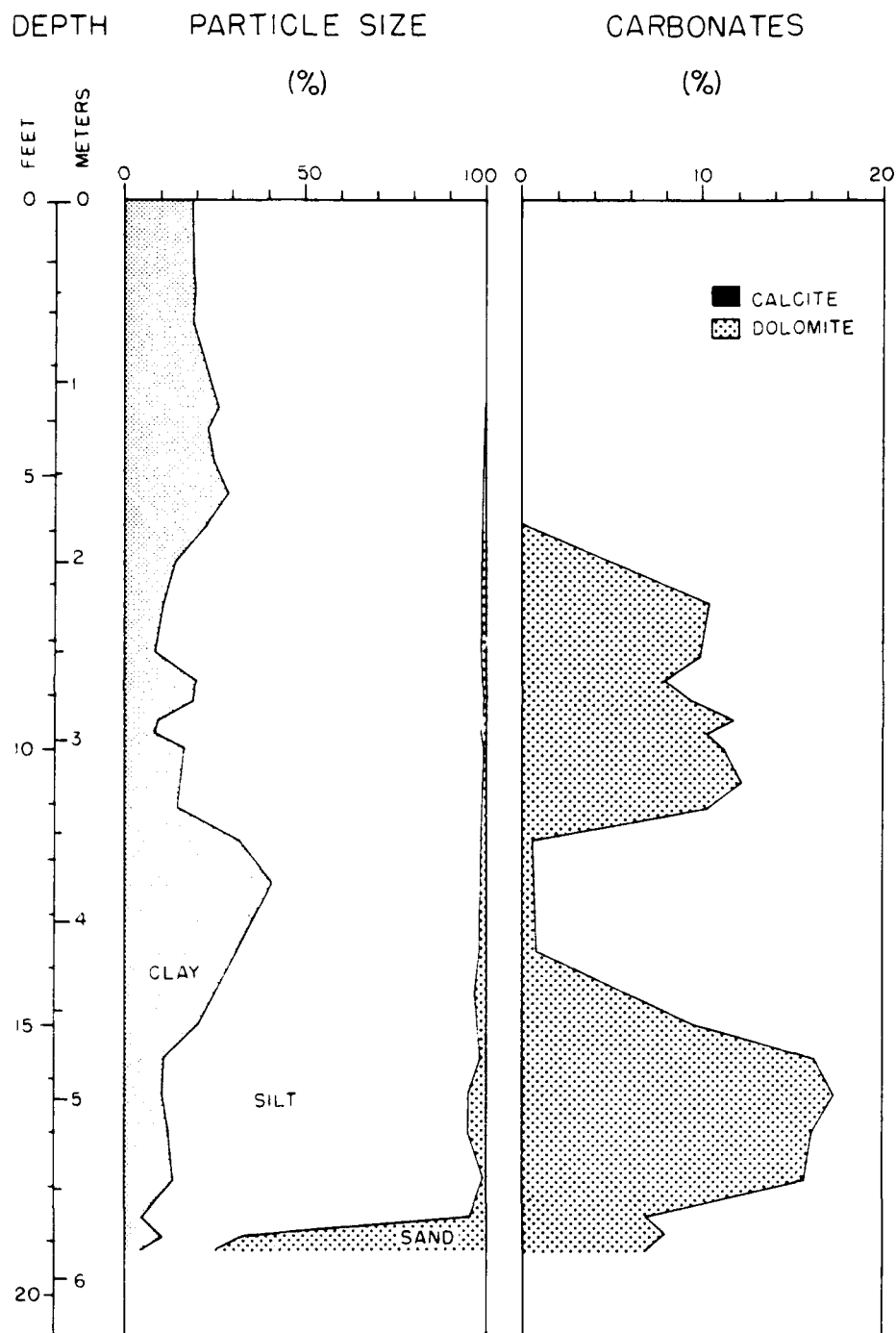
tures may be fine sandy loam and there is weak indication of original stratification. The unit occurs beneath dunes on the Bath Terrace (Figures 8-13). The Bluffs Terrace, when adjacent to the Bath, is also developed on Unit 1. Corps of Engineers boring records indicate this unit to be in excess of 9 m (30 ft) thick. The unit belongs to the Henry Formation (Willman and Frye, 1970) which consists of outwash sand and gravel of Wisconsinan age.

Unit 2. Most cores terminated in this unit and it occurs throughout the Bug Island Paleochannel as a basal unit. Unit 2 consists of deoxidized to unoxidized, unleached fine to medium sand (Figures 8-15). Coarse sand with very fine to fine pebbles occur at depth. The upper meter is most commonly interstratified with laminae and thin beds of deoxidized, unleached, sandy silt to silty clay. The silty laminae are occasionally organic, and may consist entirely of fine pieces of uncarbonized organic matter. The Henry Formation is the closest formally defined correlate.

Unit 3 is also confined to the Bug Island Paleochannel and overlies Unit 2. The contact is abrupt, but in most cases conformable with Unit 2. Unit 3 consists of interlaminated and interbedded sediments of a wide textural range. The core of the unit is commonly a strongly laminated to thinly bedded silt (Figures 16 and 17). It is generally deoxidized and unleached, but often contains some reddish brown silt strata or clay laminae that are leached or only very slightly effervescent with dilute hydrochloric acid. Commonly underlying the unit is a thin bed of oxidized, unleached or leached fine or medium sand. Fine sand may be interstratified throughout the unit. Overlying the unit core are generally sandy clay loam, loam, or clay loam strata, or strongly laminated silt to silty clay loam. Laminae of fine pieces of uncarbonized organic matter are common both above and below reddish brown strata. Unit 3 was deposited primarily in slackwater or lacustrine environments in the Bug Island Paleochannel with occasional fluvial input. The closest lithostratigraphic correlate formally defined is the Equality Formation (Willman and Frye, 1970).

STRATIGRAPHY

	STAGE	FORMATION	MEMBER	HORIZON OR ZONE
	HOLOCENE	CAHOKIA ALLUVIUM	UNDIFFERENTIATED	Ap Al B2t B3t Cl Aib _i Bb _i Cb _i DU Bb ₂
	WISCONSINAN	EQUALITY	UNDIFFERENTIATED	DU
				DU DU
				ALLUVIAL FAN SEDIMENT (UNIT 5)
				LACUSTRINE SEDIMENT (UNIT 3)
				REDDISH BROWN SILTS FLUVIAL SEDS. (UNIT 2)



29

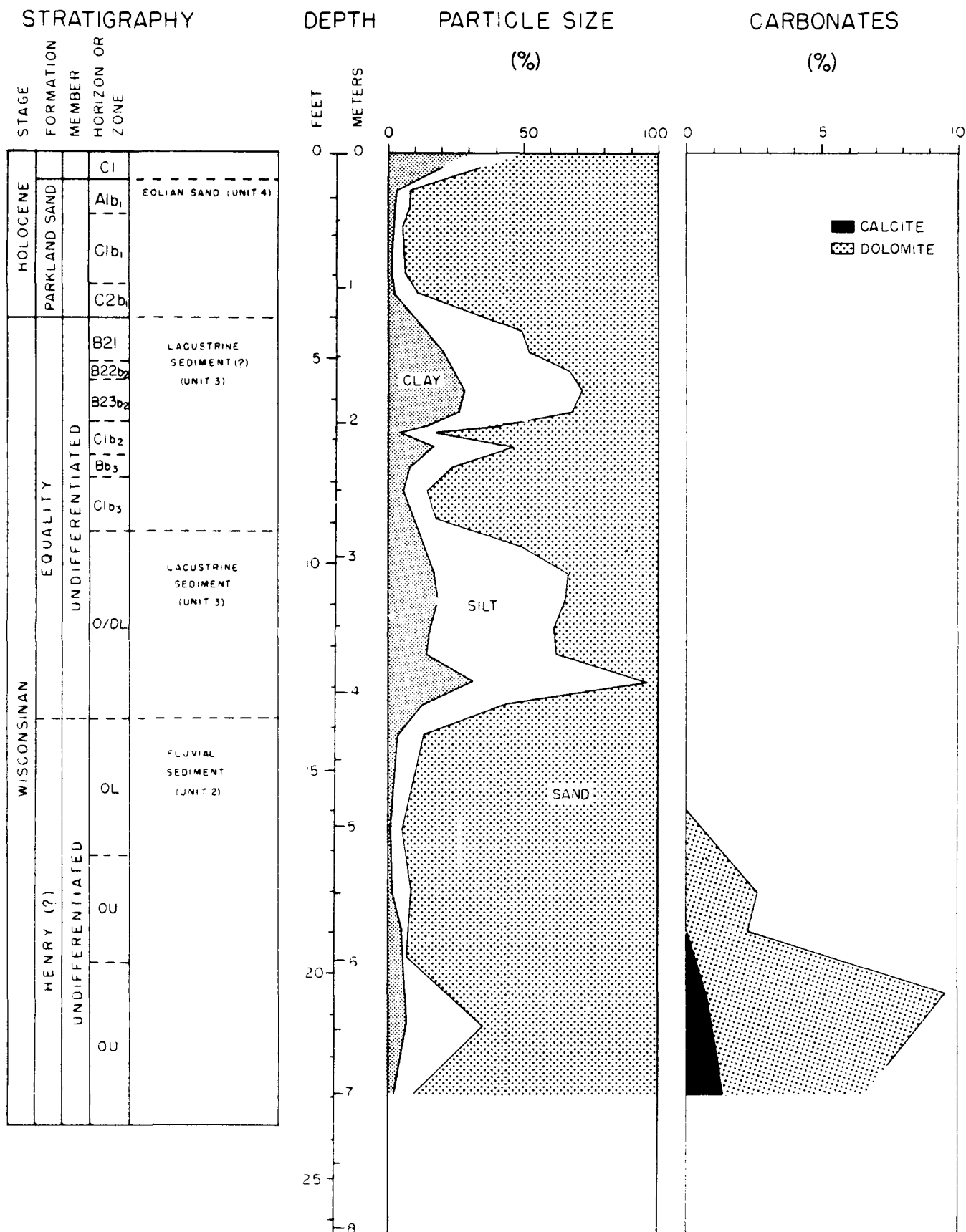


Figure 17. Stratigraphy, particle size and carbonate data for core DLC-28.

Unit 4 is composed of oxidized and leached fine sand of eolian origin (Figure 17). This unit comprises dunes over Unit 1 and less commonly, Unit 3. In only a few instances is there an intervening paleosol, and when present, it is very weakly developed. Unit 4 belongs to the Parkland Sand (Willman and Frye, 1970).

Unit 5 is located along the eastern half of the Meredosia Village District and consists of upland derived silt loam deposited primarily as alluvial fans (Figures 8-12). Colluvial deposits are also mapped as Unit 5. The upper fan deposits are weathered and leached, having oxidized to deoxidized colors. In most fans, one or more tracable buried soils occur. The lower part of Unit 5 is laminated with the distinctness of laminae increasing with depth, particularly where fans are thickest. Well preserved laminae suggest either rapid deposition, or fan delta deposition in standing water. Carbonates also pick up in lower Unit 5 sediment (Figure 16). Also common to the lower part of the unit are beds of silty clay loam which are slightly weathered. Basal fan sediments are conformable with the underlying Unit 3, and sometimes grade down into very strongly laminated deoxidized, unleached, silt and very fine sand. Laterally, Unit 5 interfingers with or buries Unit 8. It also is laterally continuous with or buried by Unit 6, and basal fan sediments may be laterally continuous with youngest Unit 3 deposits in the western part of the Bug Island Paleochannel. Unit 5 is currently mapped as part of the Cahokia Alluvium (Willman and Frye, 1970).

Unit 6 consists of oxidized and leached silt loam and silty clay loam largely of upland origin. It occurs most commonly in the Bug Island Paleochannel, especially in the vicinity of abandoned Willow and Indian Creek channels in the northeast part of the Meredosia Village District and southeast part of the Meredosia Lake District (i.e. Figure 12). Unit 6 was deposited by tributary creeks primarily as natural levees, splays and overbank deposits. It overlies Unit 3 and laterally can be interstratified with Units 5 and 8. Unit 6 is part of the Cahokia Alluvium.

Unit 7 is located only in cores DLC-43 and DLC-44 (Figure 14), west

of the western Bath Terrace remnant in the Meredosia Lake District. This unit consists of unoxidized and leached silty clay and clayey silt of slackwater origin. It is probably equivalent to the Hartwell member of the Cahokia Alluvium defined and described in districts to the south (i.e. Hajic, 1983b). Here it is underlain by Unit 2(?) and unconformably overlain by Unit 6.

Unit 8 consists of leached silty clay loam and silty clay which is commonly organic. It is the surface unit in the Bug Island Paleochannel where alluvial fan and tributary creek deposition has not occurred (Figures 8-12, 15). In the southern part of the Meredosia Village district peat and peaty silty clay textures dominate. Here the unit contains abundant gastropods and bivalves, and is calcareous. Unit 8 was deposited in swamps and shallow intermittant lakes in the Bug Island Paleochannel following channel abandonment. It may be interstratified with Units 5 and 6. At least part of Unit 8 may be equivalent to the Buck Lake member of the Cahokia Alluvium defined and described in districts to the south (i.e. Hajic, 1983b).

MEREDOSIA VILLAGE AND MEREDOSIA LAKE DISTRICT ARCHEOLOGY

One previously unrecorded archeological site was documented during the course of this study. The Marlin Winkleman site is located immediately north of core DLC-35 in the northernmost part of the Meredosia Lake District. It occurs just north of a dune on the Bath Terrace. The site consists of a light scatter of chert debris, and no retouched lithics were found.

Eighteen previously recorded sites in Center for American Archeology files occur within the Meredosia Districts (Table 3). The sites range in age from Middle Archaic through Mississippian. They are all associated with the Bluffs Terrace or Bath Terrace or related dunes except the Sunset Beach site located on a probable relict natural levee of the Illinois River.

Table 3. Known Meredosia Village and Meredosia Lake District Archeological Sites, Cultural Affiliation, and Landscape Position.

<u>Site</u>	<u>Cultural Affiliation</u>	<u>Landscape Position</u>
Willow Creek	Late Woodland	Bluffs terrace margin
Roscoe	Archaic, Late Woodland	dune on Bath Terrace
Honey Point	Late Archaic thru Late Woodland	dunes on Bluffs terrace
Shearl	Middle and Late Archaic	dune on Bluffs terrace(?)
Sunset Beach	Middle Woodland	relict natural levee(?) of Illinois River, now beach of Meredosia Lake
Wells	Early(?) and Late Woodland	Bluffs Terrace margin
Chute	indeterminate	dune on Bath Terrace
Dawson	Middle Woodland thru Mississippian	Bath Terrace
Meredosia	Middle and Late Woodland	dunes on Bath Terrace
National Starch	Early and Late Woodland	eroded Bath Terrace(?)
Virginia Holding Co.	Late Woodland	Bluff Terrace
Ruthless	indeterminate	Bluffs Terrace
Meadowlark	indeterminate	Bluffs Terraces
North Star	indeterminate	Bluffs Terrace
Small Star	indeterminate	Bluffs Terrace
Eleana	indeterminate	Bluffs Terrace
Hahn	Late Woodland	Bluffs Terrace
Pessina	indeterminate	Bluffs Terrace

Cultural chronology of the lower Illinois River Valley drainage:

<u>Culture Group</u>	<u>Age (B.P.)</u>
Historic	post 650
Mississippian	850- 650
Late Woodland	1500- 850
Middle Woodland	2050-1500
Early Woodland	2800-2050
Late Archaic	4500-2800
Middle Archaic	7000-4500
Early Archaic	9500-7000
Paleo-Indian	11000-9500

GEOMORPHIC, STRATIGRAPHIC, AND ARCHEOLOGICAL CONTEXTUAL RELATIONSHIPS

A model for predicting site location potential for both buried and surface manifestations for specific cultural groups in the Meredosia Districts is summarized in Figure 18. The evaluation is based upon the: 1) evolving reconstruction of the lower Illinois Valley landscape history (see Appendix C, this report); 2) three dimensional reconstruction of the Meredosia Districts based upon core stratigraphic data (i.e. the spatial location of lithostratigraphic units within the districts); 3) age and depositional origin of lithostratigraphic units; 4) identification and location of buried surfaces and soils; 5) present geomorphic configuration of the valley, relationships between known archeological sites, geomorphic features and geomorphic surface ages, and relationships between geomorphic surfaces and the age and origin of underlying deposits. While absolute certainty in predictions is unattainable, it is felt Figure 18 represents very close approximations, given the extent of information upon which they are based.

Seven radiocarbon dates from the Bug Island Paleochannel system indicate it was cut prior to about $14,590 \pm 240$ B.P. (ISGS-1285) (see Appendix C, this report) and was intermittantly active until about 9830 ± 160 B.P. (ISGS-1282). Six of the dates were from lacustrine Unit 3 and fluvial Unit 2 at or near the contact with Unit 3. The next to youngest date is $12,360 \pm 240$ B.P. (ISGS-1283) from Unit 3 which corresponds with the end of the Deer Plain lake phase in the lower Illinois valley (see Appendix C). The youngest age from Unit 2 is 9830 ± 160 B.P. (ISGS-1282), Core MLC-29 (Figure 12), which indicates intermittent fluvial reactivation of the western side of the Bug Island Paleochannel system from which the dated material was obtained.

The Bath Terrace probably formed when the Bug Island Paleochannel system developed (see Appendix C, this report). The Bluffs Terrace, which consists of several mid-channel bars or islands in the Bug Island Paleochannel and what appears to be reworked or incised Bath Terrace margins, formed when the Bug Island channel was active but before about 9800 B.P. (see Appendix C, this report).

LOCATION AND PRESERVATION POTENTIALS FOR
SURFACE AND BURIED ARCHEOLOGICAL SITES:
MEREDOSIA VILLAGE AND LAKE DISTRICTS

		SURFACE					BURIED							
		GEOMORPHIC SURFACES					DEPOSITIONAL UNITS							
CULTURAL GROUP	AGE B.P.	BATH TERRACE	BLUFFS TERRACE	DUNES	ALLUVIAL FAN & TRIBUTARY FEATURES	BUG ISLAND CHANNEL	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	UNIT 6	UNIT 7	UNIT 8
HISTORIC		+	+	+	+	+	-	-	-	+	+	+	-	-
MISSISSIPPIAN		+	+	+	+	-	-	-	-	+	+	+	-	-
LATE WOODLAND	1000	+	+	+	+	-	-	-	-	+	+	+	-	-
MIDDLE WOODLAND	2000	+	+	+	+	-	-	-	-	+	+	+	-	-
EARLY WOODLAND		+	+	+	+	-	-	-	-	+	+	+	-	-
LATE ARCHAIC	3000				+								-	
	4000	+	+	+	-	-	-	-	-	+	+	+	-	-
MIDDLE ARCHAIC	5000													
	6000	+	+	+	-	-	-	-	-	+	+	+	-	-
	7000													
EARLY ARCHAIC	8000	+	+	+	-	-	-	-	-	+	+	+	-	-
	9000													
PALEOINDIAN	10,000													
	11,000	+	+	+	-	-	-	-	-	+	+	-	-	-
	12,000													
	13,000													

- NO POTENTIAL
- + LOW POTENTIAL

+ MODERATE POTENTIAL
++ HIGH POTENTIAL

DEPOSITIONAL UNITS:

- 1 OL SAND (HENRY FORMATION)
- 2 DU SAND (HENRY FORMATION?)
- 3 DU, LAMINATED and BEDDED SILT, CLAY and SAND (EQUALITY FORMATION?)
- 4 OL FINE SAND (PARKLAND SAND)
- 5 O/D, L/U SILT LOAM and SILT (CAHOKIA ALLUVIUM - ALLUVIAL FANS)

- 6 OL SILTY CLAY LOAM and SILT LOAM (CAHOKIA ALLUVIUM - OTHER UPLAND DERIVED ALLUVIUM)
- 7 U, L/U SILTY CLAY and CLAYEY SILT (CAHOKIA ALLUVIUM - HARTWELL MEMBER)
- 8 O/U, L/U SILTY CLAY, SILTY CLAY LOAM and PEAT (CAHOKIA ALLUVIUM - BUCK LAKE MEMBER)

Figure 18. Location and preservation potentials for surface and buried archeological sites in the Meredosia Village and Meredosia Lake Districts.

Therefore both the Bath Terrace and Bluffs Terrace surfaces were available for occupation to all cultural groups. The underlying sediments of Unit 1 can be practically eliminated from buried site consideration due to antiquity and origin as outwash aggradation. Similarly, sites will probably not be located within Unit 2. This unit represents bed load sand when the Bug Island Paleochannel was an active sluiceway. The interstratified finer units in the top meter probably represent subsequent lacustrine deposits which accumulated with initial channel abandonment or initiation of subsequent valley lake phases. In the Bug Island paleochannel-filling Unit 3 there is only a low potential for encountering Paleo-Indian camp sites. The strongly laminated to thinly bedded unit is primarily lacustrine or slackwater in origin with occasional fluvial input of sands. The unit is found over a range of elevations that parallel the top of Unit 2. Fluctuations of valley lake levels between circa 12,000 B.P. and 10,000 B.P. (see Appendix C, this report) would have resulted in large horizontal shifts of lake shorelines and near shore environments. It is possible that younger Unit 3 surfaces were at times briefly exposed and available for occupation, and thus the low potential.

Dunes in the Meredosia Districts are primarily relict features. Dunes occur on the two sandy terraces and occasionally on Unit 3 silts; no eolian sand bodies were identified in or on alluvial fans. Several dunes encroaching upon the Bug Island Paleochannel from the west are probably due to reactivation as a result of modern farming. Farming may also account for several blowouts on the Bath Terrace. Unit 4 dune sand is considered to have a high potential for containing buried cultural material of all time periods even though the latest dune forming activity was probably shortly after 10,900 B.P. (Appendix C, this report). Burial is possible because of local historic reactivation and the action of soil processes in loose sandy sediment which may vertically move larger objects down the soil profile. Local farmer Henry Likes indicated to us that several decades ago, before intensive deep plowing, archeological sites were abundant in the Meredosia Districts, but now there are noticeably fewer visible sites (personal communication, 1984).

The alluvial fans in the Meredosia District, composed of Unit 5 silt and silt loam, are stratigraphically conformable with the underlying Unit 3. Basal fan sediment is strongly laminated, possibly being deposited in a shallow lacustrine environment, and may be temporally equivalent with youngest Unit 3 deposits along the western margin of the Bug Island Paleochannel. Investigations of other Illinois Valley fans suggest the bulk of fan deposition in the region occurred after circa 8500 B.P. and nearly ceased by about 2000 B.P. with noticeably decreased rates since circa 4000 B.P. (Hajic, 1981a; Wiant et al., 1983; Styles, 1984). The preservation of archeological sites in alluvial fan environments is a common occurrence in the Illinois Valley, and the Meredosia fans are accorded a high to moderate potential for all cultural periods. Because of slower depositional rates for the last 4000 years, the potential of Woodland occupations being fan surface manifestations is greater than the Archaic. Nevertheless, over a meter of relatively young alluvial fan deposition (lacking soil development) was recorded in several cores indicating even the youngest occupations can be buried.

Unit 6, which consists of primarily upland derived alluvium deposited as tributary creek overbank deposits is considered to have a moderate to high potential for containing buried archeological components as old as about 9800 B.P., or the latest time the Bug Island Paleochannel could have functioned. Most Unit 6 depositional environments are relatively low energy subsystems and would be conducive to preservation by burial. Much of Unit 6 deposited by tributaries entering the Meredosia Village District probably post-dates about 4000 B.P., when fan surfaces began to stabilize and tributaries incised fan surfaces. Abundant Early and Middle Woodland sites on similar landscape positions and sediment to the south suggest Unit 6 deposition nearly ceased by about 2000 B.P. In similar situations in districts to the south, archeological sites are often associated with natural levees that rise several feet above local floodbasins (Hajic, 1981b; 1981c; 1983b).

Unit 7 is correlated with the Hartwell member which is a major Holocene valley-filling unit in districts to the south (Hajic, 1983b). The Hartwell was deposited under lacustrine conditions or in a very

slowly moving fluvial regime. There is little to no potential of buried cultural deposits in the Hartwell member. There is, however, the possibility of burial of encampments along the lower Bath Terrace scarp as a result of progressively higher river stages (lake levels?) and Hartwell member aggradation.

Unit 8 was deposited primarily in swamp and shallow lacustrine environments occupying depressions in the Bug Island Paleochannel. Accumulation was probably very slow. In districts to the south, the equivalent of this unit, the Buck Lake member, was deposited in the last 3000 years. This may be the case in the Meredosia districts, but the possibility of earlier accumulation exists since the Bug Island channel was abandoned by about 9800 B.P. Floodbasins and depressional areas, while seemingly unlikely for habitation, cannot be excluded from burial or surface site consideration. While perhaps not large in numbers, or size, specialized camps for activities related to aquatic food procurement are a possibility. Equally possible is the lacustrine burial and preservation of such sites as well as their erosion and destruction by an actively meandering tributary creek.

CONCLUSIONS

For any given study area, the needs for settlement patterning and predictive modeling of buried and surface site location potentials in archeological research and cultural resource management are most efficiently and economically served by first modeling the evolutionary history of the landscape. Such an analysis includes not only identification of surficial features and their ages. The location and morphology of previous landscape features may be deeply buried and have no readily apparent relationship to the present landscape. The vertical dimension requires equal emphasis to temporally and spatially define terminal Wisconsinan and Holocene depositional units and environments, erosional hiatuses, and paleo-landscapes. In alluvial environments, such a reconstruction is paramount to establishing the framework which provides the basis for making sound archeological interpretations.

In the Meredosia Districts, several lithostratigraphic units, which

comprise large volumes of valley fill, can categorically be excluded from consideration of buried site potential based upon either their age and/or environment of deposition. The location and vertical and horizontal limits of other units that have a high potential for including buried archeological deposits, such as alluvial fans, have been clearly defined by subsurface investigation.

Buried and surface site potentials can be evaluated for any potential borrow areas by using Figure 18 in conjunction with the geomorphic maps (Figures 4 and 5) and stratigraphic cross-sections (Figures 8-15) of the Meredosia Districts. A generalized summary for buried site potential is presented in Figures 19 and 20. Prior to any borrow activities, a systematic site specific surface survey must still be conducted.

This investigation is considered a component of the archeological survey. During subsequent archeological testing and mitigation phases, specific environments and deposits can, and should, be investigated in more detail.

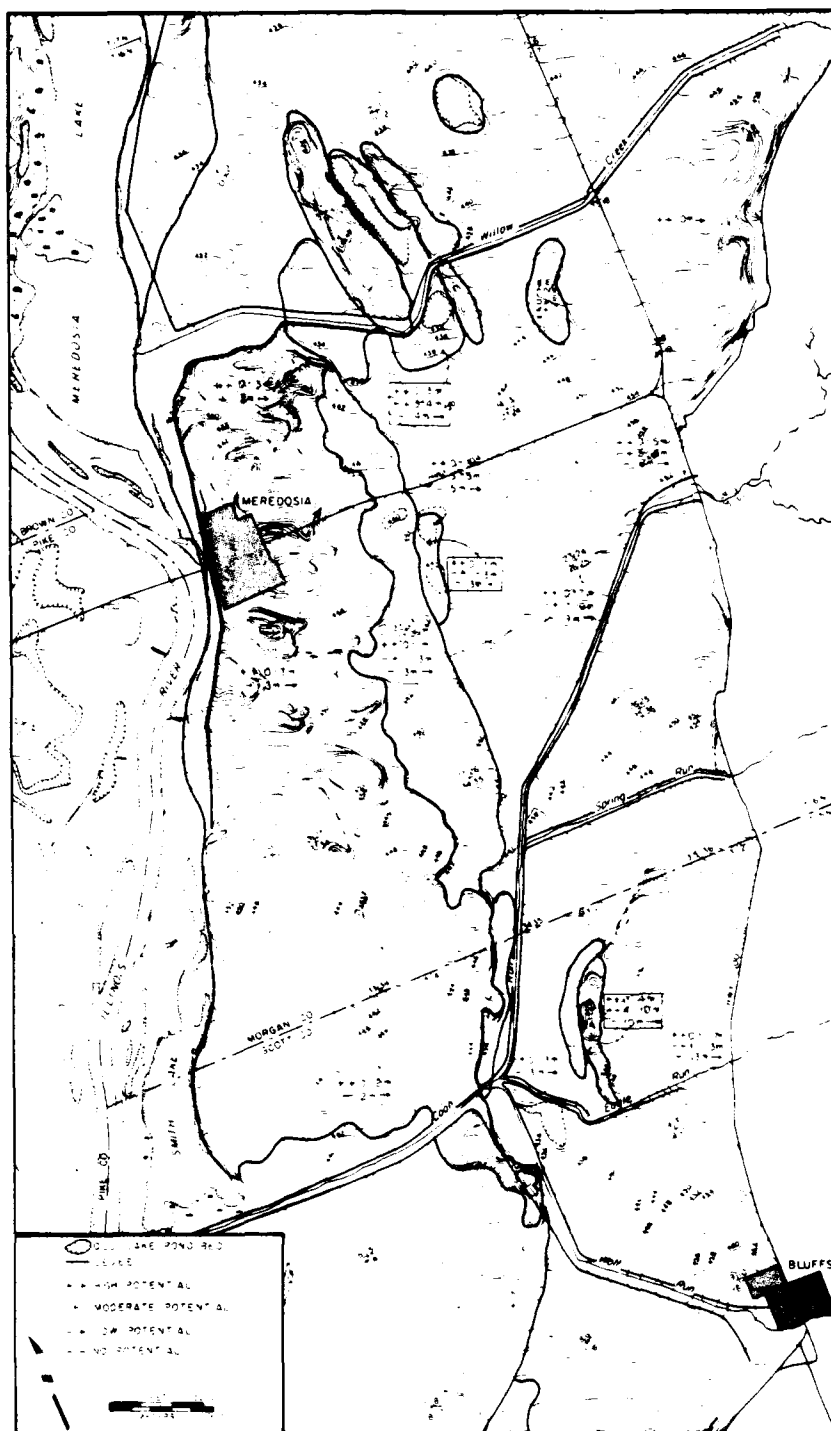


Figure 19. Estimated buried site potentials in the Meredosia Village District.

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APPENDIX A
Core Descriptions

Note: Weathering zone terminology is after Hallberg, Fenton, and Miller (1979). The terms "oxidized" (O), "deoxidized" (D), and "unoxidized" (U) are standard terminology based upon certain moist Munsell colors and iron segregations. The weathering zones are also related to hydrologic conditions such as the length of saturated conditions. The second letter refers to unleached (U) and leached (L) condition of the sediments in relation to carbonate minerals. Mottling of the sediment is signified by (M).

MLC-1

Master core number: 473
 Location: SE, SE, SW, Sec. 26, T16N, R13W, Moreau Co., on H. Yeck's field rd. 20ft. west of the base of the Coon Run levee
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soil: Dupre silt loam
 Elevation: 134.1m. (440ft.)
 Cored by David S. Leigh, 9-7-83
 Described by Edwin R. Hajic, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 32 C1 (0- 13)	dark brown (10YR3/3) silt loam, massive, friable, slightly to noneffervescent at base, abrupt boundary.	ML
32- 64 C2 (13- 33)	dark brown (10YR3/3) silt loam, and very dark brown (10YR2/2) heavy silt loam, stratified with strong, laminated zones and zones with weak subangular blocky structure friable, slightly to noneffervescent, abrupt boundary.	ML
64- 150 A1b (33- 59)	very dark brown (10YR2/2) peaty silty clay loam to loam, weak fine subangular blocky to massive, firm, strongly to slightly effervescent, clear boundary.	ML
150- 209 B2b (59- 82)	very dark grayish brown (2.5Y3/2) to dark grayish brown (2.5Y4/2) clay loam, with common medium dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, clear boundary.	CL
209- 325 Cb (82-128)	olive brown (2.5Y4/4), light olive brown (2.5Y5/4) and grayish brown (2.5Y5/2) very fine and fine sandy loam, loam, silt, very fine and fine sand, and coarse silt, moderately to strongly laminated, with common fine dark yellowish brown (10YR4/6) Fe mottles, noneffervescent to slightly effervescent, abrupt boundary.	ML
325- 336 UU (128-132)	dark gray (5Y4/1) silty clay, very weakly laminated, violently effervescent, abrupt boundary.	CL
336- 400+DU (132-157)	dark grayish brown (2.5Y4/2) silt and and very fine sand silt and moderate to strong medium laminae, strongly effervescent, refusal.	ML

MLC-2

Master core number: 474
 Location: SW, SE, SW, Sec. 26, T17N, R13W, Moreau Co., on field rd. about 18 mi. west of Coon Run levee
 Landscape position: Bue Island channel
 Surface archeology: none
 SCS mapped soil: Ambraw clay loam
 Elevation: 133.8m. (439ft.)
 Cored by David S. Leigh, 9-7-83
 Described by Edwin R. Hajic, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 40 C (0- 16)	very dark grayish brown (10YR3/2) heavy silt loam, massive, firm, noneffervescent, very abrupt boundary.	ML
40- 60 A1b (16- 24)	very dark brown (10YR2/2) silty clay loam, moderate fine subangular blocky, firm, noneffervescent, clear boundary.	CL
60- 82 Bb (24- 32)	very dark brown (10YR2/2) silty clay loam, moderate medium subangular blocky, firm, noneffervescent, clear boundary.	CL
82- 112 Cb (32- 44)	very dark grayish brown (10YR3/2) and very dark brown (10YR2/2) and black (10YR2/1) silt loam and silty clay loam, stratified, noneffervescent, fine sandy loam unit at top, abrupt boundary.	ML
112- 150 B2b2 (44- 59)	finely mottled dark grayish brown and olive brown (2.5Y4/2) and (2.5Y4/4) loam and clay loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak medium subangular blocky, firm, noneffervescent, clear boundary.	CL
150- 186 B3b2 (59- 73)	dark grayish brown (2.5Y4/2) fine sandy loam, with many fine dark yellowish brown (10YR4/4) and dark yellowish brown (10YR4/6) mottles, weak medium subangular blocky, friable, noneffervescent, abrupt boundary.	SP
186- 201 Cb2(UU) (73- 79)	olive gray (5Y5/2) sandy silty clay, with common fine light olive brown (2.5Y5/4) mottles, slightly effervescent, sand % increases rapidly toward base, abrupt boundary.	CL
201- 340 D/UU (79-134)	light olive brown (2.5Y5/6) fine and medium sand with common dark gray (5Y4/1) thick silt laminae, especially at top of unit, stratified, slightly to strongly effervescent, abrupt boundary.	SP
340- 400+DU (134-157)	dark grayish brown (10YR4/2) and brown to dark brown (10YR4/3) silt and coarse silt, stratified and zones with moderate laminae, strongly effervescent, few protovine and sand, fills, fine sand laminae begin at 365cm, and increase in frequency with depth, strong, laminated at base, refusal.	ML

MLC-3

Master core number: 475

Location: SE. 5/4, SW. 26, T16N, R13W, Morgan Co., 15ft. north of field rd.
and about 110ft. east of terrace scarp

Landscape position: Bug Island channel

Surface archeology: none

SCS mapped soil: Ambur clay loam

Elevation: 134.1m. (440ft.)

Cored by: David S. Leigh, 9-8-83

Described by: Edwin R. Haug, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 26 A1 (0- 10)	black (10YR2/1) silt, clay loam, moderate fine subangular blocky, firm, noneffervescent, clear boundary.	CL
26- 85 B1 (10- 33)	black (10YR2/1) silt, clay loam, (with high sand content), moderate medium subangular blocky to columnar, firm, noneffervescent, clear boundary.	CL
85- 116 B2t (33- 46)	black (10YR2/1) clay loam, moderate coarse subangular blocky tending to columnar, firm, noneffervescent, continuous thin black (10YR2/1) clay coats on ped faces, clear boundary.	CL
116- 195 B3t (46- 77)	dark grayish brown (2.5Y4/2) clay loam, with many fine dark yellowish brown (10YR4/6) Fe mottles and dark yellowish brown (10YR4/4) mottles, weak coarse subangular blocky, firm, noneffervescent, common thin black (10YR2/1) and very dark grayish brown (2.5Y3/2) clay coats on ped faces, clear boundary.	CL
195- 211 C (DL) (77- 83)	very dark grayish brown (2.5Y3/2) loamy sand, poorly sorted, weak coarse subangular blocky, friable, noneffervescent, abrupt boundary.	SW
211- 250+DU (83- 98)	olive brown (2.5Y4/3) poorly sorted medium and coarse sand, common very fine to medium pebbles, stratified, slightly effervescent, few dark grayish brown (2.5Y4/2) clay laminae, pebbly layer at 225cm., refusal.	SW

MLC-4

Master core number: 476

Location: NE. 1/4, NE. 34, T16N, R13W, Morgan Co., approx. 14 mi. west of MLC-3 on south side of field rd.

Landscape position: Bluffs Terrace

Surface archeology: none

SCS mapped soil: Hopedston sandy loam

Elevation: 134.7m. (442ft.)

Cored by: David S. Leigh, 9-8-83

Described by: Edwin R. Haug, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 32 A1 (0- 13)	very dark gray (10YR3/1) fine sandy loam, weak fine granular, friable, noneffervescent, clear boundary.	SP
32- 66 B1 (13- 26)	very dark grayish brown (10YR3/2) fine sandy loam, with common fine dark yellowish brown (10YR3/4) mottles, weak medium subangular blocky, friable, noneffervescent, clear boundary.	SP
66- 100 B2 (26- 39)	dark brown (10YR3/3) fine sandy loam, with many fine dark yellowish brown (10YR3/4) mottles, moderate medium subangular blocky, friable, noneffervescent, clear boundary.	SP
100- 143 B3 (39- 56)	brown to dark brown (7.5YR4/4) loamy fine sand, with many fine dark yellowish brown (10YR3/4) mottles, weak coarse subangular blocky, friable, noneffervescent, clear boundary.	SP
143- 159 IIC1 (56- 63)	dark yellowish brown (10YR4/4) fine and medium sand, with many fine dark yellowish brown (10YR3/4) mottles, single grain, loose, noneffervescent, very abrupt boundary.	SP
159- 180 OL (63- 71)	dark yellowish brown (10YR3/4) loam, fine sand, weak coarse subangular blocky, noneffervescent, clear boundary.	SP
180- 423+DL (71- 167)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR4/4) fine and medium sand, noneffervescent, refusal.	SP

MLC-5

Master core number: 477

Location: ML.NE, Sec. 27, T16N, R13W, Moreau Co., on the south side of Beauchamp Rd. directly across from Virgil Beauchamp's corn crib

Landscape position: Bluffs Terrace

Surface archeology: none

SCS mapped soil: Hoopeston sandy loam

Elevation: 134.4m. (441ft.)

Cored by: David S. Leish, 9-8-83

Described by: Edwin R. Haeber, 8-5-84

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-130 OL (0-51)	solum of Hoopeston sandy loam, clear boundary	SP
130-180 C (51-71)	dark yellowish brown (10YR4/4) coarse and medium sand, poorly sorted, common very fine and fine pebbles, stratified, noneffervescent, gradual boundary.	SP
180-312 OL (71-123)	dark yellowish brown (10YR4/4) medium and coarse sand, moderately well sorted, stratified, noneffervescent, few zones with small amount of silt, abrupt boundary.	SP
312-360+OL (123-142)	dark yellowish brown (10YR3/4) clayey coarse sand and coarse sand, poorly sorted, many very fine and fine pebbles, stratified, noneffervescent refusal.	SW

MLC-6

Master core number: 478

Location: SW.SW, Sec. 23, T16N, R13W, Moreau Co. 20ft. north of Beauchamp Rd. and 25ft. west of bend in ditch on Virgil Beauchamp property.

Landscape position: Bug Island Channel

Surface archeology: none

SCS mapped soil: Darwin silt, clay

Elevation: 134.1m. (440ft.)

Cored by: David S. Leish, 9-8-83

Described by: Edwin R. Haeber, 8-5-84

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-32 C1 (0-13)	very dark brown (10YR2/2) heavy silt loam, moderate medium to fine subangular blocky, firm, violently effervescent, abrupt boundary.	ML
32-89 A1b (13-35)	black (10YR2/1) peaty silty clay loam, moderate fine granular, firm, violently effervescent, many gastropods, whole and fragmented, abrupt boundary.	OL
89-120 A3b (35-47)	very dark gray (10YR3/1) heavy silt loam, weak medium subangular blocky, firm, violently to slightly effervescent, clear boundary.	ML
120-167 B22bt (47-66)	dark gray (10YR4/1) silty clay, strong coarse prismatic, very firm, noneffervescent, continuous thin very dark gray (10YR3/1) clay coats on ped faces, clear boundary.	CL
167-204 B23bt (66-80)	grayish brown (2.5Y5/2) silty clay loam, with many medium dark yellowish brown (10YR4/4) and dark yellowish brown (10YR4/6) Fe mottles, moderate coarse subangular blocky, noneffervescent, many thin very dark gray (10YR3/1) clay coats on ped faces and in pores, gradual boundary.	CL
204-240+B3bt (80-94)	dark grayish brown (2.5Y4/2) and grayish brown (2.5Y5/2) sand, loam, with few medium dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, common thin very dark gray clay coats on ped faces and in pores, refusal.	SP

MLC-7

Master core number: 479
 Location: SE 1/4 SW 1/4 Sec. 23, T16N, R13W, Morgan Co., 45ft. north of Beauchamp Rd.
 and about 85ft. west of terrace edge
 Landscape position: east of Bluffs Terrace
 Surface archeology: none
 SCS mapped soil: LaHogue sandy loam
 Elevation: 134.7m. (442ft.)
 Cored by: David S. Leish, 9-13-83
 Described by: Edwin R. Hajic, 8-5-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 153 OL (0- 60)	solum of LaHogue sandy loam, clear boundary	SP
153- 480+ C (OL) (60-189)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR4/4) fine and medium sand, moderately to well sorted, few fine pebbles at 350-370cm. and 430-450cm., noneffervescent, refusal.	SP

MLC-8

Master core number: 480
 Location: NW 1/4 NE 1/4 Sec. 26, T16N, R13W, Morgan Co., 50ft. south of Beauchamp and 12ft. east of the edge of a north-south field road
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soil: Littleton silt loam
 Elevation: 135.9m. (446ft.)
 Cored by: David S. Leish, 9-13-83
 Described by: Edwin R. Hajic, 8-5-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 65 A1 (0- 26)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	ML
65- 97 B (26- 38)	dark brown (10YR3/3) silt loam, with many fine dark yellowish brown (10YR3/4) mottles, weak medium subangular blocky, firm, noneffervescent, gradual boundary.	ML
97- 179 C (MDU) (38- 70)	light olive brown (2.5Y5/4) to light yellowish brown (2.5Y6/4) at base silt loam to silt, with many fine light olive brown (2.5Y5/4) and olive brown (2.5Y4/4) mottles, weak coarse subangular blocky, firm, slightly effervescent, abrupt boundary.	ML
179- 257 D/OU (70-101)	light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/6), and grayish brown (2.5Y5/2) and dark grayish brown (2.5Y4/2) silt and dark yellowish brown to yellowish brown (10YR4/6) to (10YR5/6) very fine and fine sand, stratified with some silt zones, moderately to strongly laminated and with sand laminae, slightly to strongly effervescent, variable, very abrupt boundary.	ML
257- 330 DU (101-130)	light brownish gray (2.5Y6/2) and light yellowish brown (2.5Y6/4), and light gray (2.5Y7/2) and light olive brown (2.5Y5/3) silt, strongly laminated, strongly effervescent, very abrupt boundary.	ML
330- 353 DU (130-139)	grayish brown (2.5Y5/2) coarse silt and silt, strongly laminated, strongly effervescent, clear boundary.	ML
353- 399 MUU (139-157)	olive gray (5Y5/2) and olive (5Y5/3) silty clay to clay, strongly laminated, strongly to violently effervescent, upper half has a 5cm. zone of marl laminae, top of unit has whole gastropods, very abrupt boundary.	CL
399- 425+ MUU (157-167)	strongly laminated grayish brown (2.5Y5/2) and brown (7.5YR5/2) silt and light olive brown (2.5Y5/4) fine sand, silt is strongly effervescent and sand is slightly effervescent, refusal.	ML

Master core number: 481
 Location: SE. 1/4 Sec. 24, T16N, R13W, Morgan Co., 30ft. west of Coon Run levee
 and 80ft. north of Beauchamp Rd.
 Landscape position: medial alluvial fan
 Surface archeological: none
 SCS mapped soil: Dupre silt loam
 Elevation: 139.0m. (456ft.)
 Cores by: David S. Leigh, 9-14-83
 Described by: Edwin R. Haucio, 8-4-84

664- 702 DU
 (269-276)

ML

Black (10YR2/1) and very dark gray (10YR3/1) coarse silt, thin massive bed with many strongly laminar especially at top, slightly to strongly effervescent, variable, many gastropod and bivalve shells whole and fragmented in top 15cm, mottles, few fine pieces of uncarbonized organic matter, very abrupt boundary.

702- 816+U/DU
 (276-321)

ML

Very dark gray (5Y3/1) and dark olive gray (5Y3/2) coarse silt and grayish brown (2.5Y5/2) silt, thinly bedded with some units strongly laminated, especially in lower half, strongly effervescent, common fine uncarbonized organic matter, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
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0- 112 OL (0- 44)	solum of a Dupre silt loam, gradual boundary	ML
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112- 135 C (44- 53)	olive brown (2.5Y4/4) silt loam, with man. fine dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocks, friable, very slightly effervescent, clear boundary.	ML
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135- 210 Ab (53- 83)	very dark grayish brown (10YR3/2) silt loam, with man. fine dark yellowish brown (10YR3/4) mottles, weak fine subangular blocks, friable, noneffervescent, gradual boundary.	ML
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210- 330 Bb (83-130)	olive brown (2.5Y3/4) silt loam, with many fine dark yellowish brown (10YR3/6) mottles, weak coarse subangular blocks, friable, noneffervescent to very slightly effervescent, few thin dark brown (10YR3/3) clay coats in pores, gradual boundary.	ML
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330- 445 C (Mbu) (130-175)	light olive brown (2.5Y5/4) and olive brown (2.5Y4/4) silt loam, with common fine light olive brown (2.5Y5/6) mottles, weak to moderately laminated at base, noneffervescent to slightly effervescent at base, abrupt boundary.	ML
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445- 491 Mbu (175-193)	olive brown (2.5Y3/4) silty clay loam, with many fine dark yellowish brown (10YR3/6) Fe mottles and with many fine olive brown (2.5Y4/3) mottles, weakly laminated to massive very slightly effervescent, clear boundary.	CL
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491- 620 Mbu (193-244)	grayish brown (2.5Y5/2) and light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/4) silt, with common fine dark yellowish brown (10YR4/6) mottles, strongly laminated strongly effervescent, rare fine sand laminae near base, gradual boundary.	ML
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620- 664 Mbu (244-269)	grayish brown (2.5Y5/2) and dark grayish brown (2.5Y4/2) silt and coarse silt, with common fine dark yellowish brown (10YR4/6) mottles, moderately laminated, strongly to violently effervescent, few gastropods, very abrupt boundary.	ML
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MLC-10

Master core number: 482
 Location: NW1/4, NW1/4, Sec. 26, T16N, R13W, Moreau Co., 40ft. south of Beauchamp Rd.
 and 40ft. east of fence line
 Landscape position: medial alluvial fan
 Surface: archeological none
 SCS mapped soil: Durp silt loam.
 Elevation: 138.1m. (453ft.)
 Cored by David S. Ish, 9-14-83
 Described by: Edwin R. Hajic, 8-4-84

590-600+DU
 (232-234)

grayish brown (2.5Y5/2) fine and very fine sand,
 few laminae from the above unit, violently
 effervescent, refusal.

SP

Depth in Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 38 C1(SPOIL) (0- 15)	brown to dark brown (10YR4/3) silt loam, massive, friable, noneffervescent, clear boundary.	ML
38- 98 C2 (15- 34)	very dark grayish brown (10YR3/2) silt loam, weak fine granular, friable, noneffervescent, abrupt boundary.	ML
98- 198 A1b (34- 54)	black (10YR2/1) silt loam, moderate fine granular, very friable, noneffervescent, few fine charcoal pieces, abrupt boundary.	ML
198- 324 OL (54-128)	buried solum, silty A horizon, heavy silt loam Bt horizons, gradual boundary.	ML
324- 365 MDL (128-144)	light olive brown (2.5Y5/4) silt loam, with many fine light olive brown (2.5Y5/6) mottles, weak coarse subangular blocky, friable, noneffervescent, gradual boundary.	ML
365- 424 MDU (144-167)	grayish brown (2.5Y5/2) and light olive brown (2.5Y5/4), and olive brown (2.5Y4/4) silt, moderate, to strongly laminated at base, with common fine dark yellowish brown (10YR4/6) and light olive brown (2.5Y5/6) mottles, slightly effervescent, very abrupt boundary.	ML
424- 492 MDU (167-194)	grayish brown (2.5Y5/2) and dark grayish brown (2. 5Y4/2) silt and coarse silt, strongly laminated, with common fine and medium dark yellowish brown (10YR4/6) Fe mottles, slightly effervescent, very abrupt boundary.	ML
492- 511 DL (194-201)	light brownish gray (2.5Y6/2) and grayish brown (2.5Y5/2) silt, weak thinly laminated to massive, few brown to dark brown (7.5YR4/2) to (7.5YR4/4) silt, clay laminae, especially at base, noneffervescent, very abrupt boundary.	ML
511- 590 DU (201-232)	dark grayish brown (2.5Y4/2), grayish brown (2.5Y5/2), and light brownish gray (2.5Y6/2) silt and coarse silt, strongly laminated and thin massive beds, strongly to violently effervescent, few fine uncarbonized pieces of organic matter, very abrupt boundary.	ML

MLC-11

Master core number: 483

Location: SW, SE, SE, Sec. 23, T16N, R13W, Morgan Co., 45 ft. north of Beauchamp Rd. directly across the road from the house with a white tractor tire in the front yard.

Landscape position: medial alluvial fan

Surface archeology: none

SCS mapped soil: Dupo silt loam

Elevation: 136.9m (449ft.)

Cured by: David S. Leisen, 9-14-83

Described by: Edwin R. Hajic, 8-5-84

415- 600 DU
(163-236)

light yellowish brown (2.5Y6/4) fine sand, violently effervescent, few dark grayish brown (2.5Y4/2) and organic laminae which are strongly effervescent, indeterminate boundary.

600- 720+DU
(236-283)

light olive brown (2.5Y5/4) fine and medium sand, few very dark grayish brown (10YR3/2) sand, silt laminae which are strongly effervescent, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 30 Ap (0- 12)	very dark grayish brown (10YR3/2) sandy loam, massive, firm, noneffervescent, clear boundary.	ML
30- 72 A1 (12- 28)	very dark grayish brown (10YR3/2) silt loam, moderate fine granular, friable, noneffervescent, gradual boundary.	ML
72- 102 B (28- 40)	dark brown (10YR3/3) silt loam, moderate medium subangular blocky, friable, noneffervescent, gradual boundary.	ML
102- 229 C (MDU) (40- 90)	light olive brown (2.5Y5/4) to light yellowish brown (2.5Y6/4) at base silt, with many fine light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/mottles), weak subangular blocky to slightly, to strongly effervescent at base, last 20cm. have few thin dark grayish brown (2.5Y4/2) silt coats on ped faces and few thin Fe coats on ped faces, very abrupt boundary.	ML
229- 289 11Bb (90-114)	brown to dark brown (10YR4/3) silty clay loam, with many fine dark yellowish brown (10YR3/6) Fe mottles, weak fine subangular blocky breaking to weak fine subangular blocky, firm, very slightly effervescent, very abrupt boundary.	ML
289- 340 MDU (114-134)	light olive brown (2.5Y5/3) silt, with many fine dark yellowish brown (10YR4/6) and light olive brown (2.5Y5/4) mottles, weak coarse subangular blocky, firm, slightly effervescent, abrupt boundary.	ML
340- 391 DU (114-154)	light yellowish brown (2.5Y6/4) and olive yellow (2.5Y6/6) fine sand with few grayish brown (2.5Y5/2) silt laminae, stratified, slightly effervescent, abrupt boundary.	SP
391- 415 MDU (154-163)	brown (10YR5/3) and light olive brown (2.5Y5/4) silt, with common medium and fine dark yellowish brown (10YR4/6) mottles, weakly laminated, slightly effervescent, few very fine sand laminae, abrupt boundary.	ML

MLC-12

Master core number: 484

Location: SE, SE, Sec. 23, T16N, R13W, Morgan Co., midway between MLC-10 and MLC-11, 30 ft. north of Beauchamp Road

Landscape position: medial alluvial fan

Surface archeological: none

SCS mapped soil: Littleton silt loam

Elevation: 137.5m. (451ft.)

Cored by: David S. Leigh, 9-21-83

Described by: Edwin V. Hajic, 8-5-84

Depth (m Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 124 A1(Cum.) (0- 49)	dark brown (10YR3/3) silt loam, variable zones of moderate fine platy and moderate fine granular structures, friable, noneffervescent, abrupt boundary.	ML
124- 202 C1 (49- 30)	very dark gray (10YR3/1) to dark grayish brown (10YR4/1) variable colored silt loam and silt, stratified with units of moderately laminated zones, moderate fine to medium subangular blocky, friable, noneffervescent to very slightly effervescent, some units with common to many thin to moderately thick black (10YR2/1) clay coats on ped faces and in pores, moderately bioturbated with inclusions of very fine peds from two units below, clear boundary.	ML
202- 242 C2 (30- 95)	black (10YR2/1) heavy silt loam, and grayish brown (10YR5/2) silt and silt loam, stratified with units of weak laminae and moderate fine granular and subangular blocky structures, friable to firm, noneffervescent to slightly effervescent, heavy silt loam units have many very fine peds of light olive brown (2.5Y5/4 and 2.5Y5/6) silt loam, few to common thin to moderately thick black (10YR2/1) clay coats on ped faces and in pores, abrupt boundary.	ML
242- 324 Bbt (95-128)	light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/4) heavy silt loam and silt loam, weakly stratified with weak medium and coarse subangular blocky structures, with common fine dark yellowish brown (10YR4/6) Fe mottles, firm to friable, noneffervescent to very slightly effervescent, common thin and moderately thick black (10YR2/1) coats in pores and few thin to moderate, thick black (10YR2/1) coats on ped faces, clear boundary.	ML
324- 354 Ct (128-139)	light yellowish brown (2.5Y6/3) and light yellowish brown (2.5Y6/4) silt, weakly laminated, with many fine and medium light olive brown (2.5Y5/4) mottles, very slightly effervescent, very abrupt boundary.	ML

Comments: none

354- 464 UU
(139-183)

light brownish gray (2.5Y6/2) and grayish brown (2.5Y5/2) with some dark grayish brown (2.5Y4/2) towards base, silt, moderate to strong laminae at base, few heavier laminae (silt loam) and fine sand, silt laminae at base, few fine dark yellowish brown (10YR4/6) Fe mottles, slightly effervescent, very abrupt boundary.

464- 505 UL
(183-199)

olive (5Y5/3) silty clay with common reddish brown (5YR5/3) clay peds, peds increase in frequency toward base, base is almost entirely reddish brown (5YR4/3, 4/4) silty clay, massive to weakly laminated at base, noneffervescent, very abrupt boundary.

505- 600 UU
(199-236)

grayish brown (2.5Y5/2) and olive gray (5Y5/2) silt and very fine sand, silt, olive yellow (2.5Y6/6) and light olive brown (2.5Y5/6) very fine and fine sand, top 7cm. has brown (7.5YR5/4) and reddish brown (5YR5/3) silty clay and silt laminae, strongly effervescent, few dark grayish brown (2.5Y4/2) organic silt laminae, gradual boundary.

600- 800+UU
(236-315)

light yellowish brown (2.5Y6/4) fine sand, with few dark yellowish brown (10YR4/4, 3/4) silt laminae, few organic laminae, violently effervescent, refusal.

MLC-13

Master core number: 485
 Location: NW, SE, NE, Sec. 24, T16N, R13W, Morgan Co., 100ft. south of Hwy. 104 and
 150ft. west of Hwy. 100-67 at the edge of a corn field
 Landscape position: medial alluvial fan
 Surface archeology: none
 SDS mapped soil: Worthen silt loam
 Elevation: 135.6m. (445ft.)
 Cored by: David S. Leigh, 9-4-83
 Described by: Edwin R. Hajic

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 86 OL (0- 34)	solum 1, silt loam, clear boundary	ML
86- 234 OL (34- 92)	solum 2, silt loam, clear boundary	ML
234- 298 C(MDL) (92-117)	finely mottled light olive brown (2.5Y5/4) and light olive brown (2.5Y5/6) light silt loam, weak coarse subangular blocky, friable, noneffervescent, few thin black (10YR2/1) clay coats in pores, gradual boundary.	ML
298- 377 MDL (117-148)	medium and finely mottled dark yellowish brown (10YR3/4) and light olive brown (2.5Y5/4) silt, zones of weak fine laminations, massive, noneffervescent, abrupt boundary.	ML
377- 500 DU (148-197)	light yellowish brown (2.5Y6/4), light olive brown (2.5Y5/4) and light olive brown (2.5Y5/3) (variegated) silt and very fine sand, moderately to strongly laminated, slightly effervescent, abrupt boundary.	ML
500- 534 DU (197-210)	thinly bedded light olive brown (2.5Y5/4), grayish brown (2.5Y5/2) and light olive brown (2.5Y5/3) (variegated) heavy silt loam and silt, as 377, silt zones are weakly laminated, slightly to strongly effervescent, variable, very abrupt boundary.	ML
534- 588 DL (210-231)	grayish brown (2.5Y5/2) and dark grayish brown (2.5Y4/2) clay loam, strongly laminated at top to massive, top has several organic laminae and loam, fine sand laminae, with common medium and coarse dark yellowish brown (10YR4/6) Fe mottles, noneffervescent, very abrupt boundary.	CL
588- 596 O/U (231-235)	moderately laminated reddish brown (2.5YR4/4)2) and olive gray (5Y5/2) sandy clay, with common medium dark yellowish brown (10YR4/6) Fe mottles, very abrupt boundary.	CL
596- 658+D/U (235-259)	thinly bedded grayish brown (2.5Y5/2) fine sand and and olive gray (5Y5/2) loam, few laminated zones, abrupt boundaries between units, (sand possibly dune sand), refusal.	ML

MLC-14

Master core number: 436
 Location: NW 3/4, NE 1/4, Sec. 24, T16N, R13W, Moreau Co., 40 ft. south of Hwy. 100 and 1/4 mi. west of MLC-13 in edge of corn field
 Landscape position: medial alluvial fan
 Surface archeology: none
 SCS mapped soil: Littleton silt loam
 Elevation: 136.4m. (449ft.)
 Cored by: David S. Leish, 9-21-83
 Described by: Edwin R. Haver, 7-30-84

350- 565 MDU
 (138-222)
 grayish brown (2.5Y5/2) and light olive brown (2.5Y5/3) silt, stratified some zones with weak to moderate laminae, with few fine and medium dark yellowish brown (10YR4/6) Fe mottles, slightly effervescent, thin sand beds or thick laminae at 335cm., 370cm., 392cm., 446cm., and between 494cm., heavy dark iron staining at base, clear boundary.

565- 599 DU
 (222-236)
 stratified and finely laminated grayish brown (2.5Y5/2) and light olive brown (2.5Y5/3) silt and very fine sand, with few medium dark yellowish brown (10YR4/6) Fe mottles, strongly effervescent, top 5cm. is heavily oxidized, very abrupt boundary.

599- 650 D/UU
 (236-256)
 strongly laminated dark gray (5Y4/1), light yellowish brown (2.5Y6/4), light yellowish brown (2.5Y6/3) and light olive brown (2.5Y5/4) silt and silt loam, strongly effervescent, ver. abrupt boundary.

650- 670 UU
 (256-264)
 very dark gray (5Y3/1) silt loam with sand increasing at base, weakly laminated to massive, with few fine very dark gray (7.5YR3/1) mottles near base, strongly effervescent, one sand, ver. abrupt boundary.

670- 770+DU
 (264-303)
 dark grayish brown (10YR4/2) fine and medium sand with some silt, few laminae of dark grayish brown (2.5Y4/2) silt, strongly effervescent, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 87 A1 (0- 34)	black (10YR2/1) silt loam, moderate fine granular, friable, noneffervescent, gradual boundary.	ML
87- 157 B2 (34- 62)	very dark brown (10YR2/2) silt loam, moderate medium subangular blocky, friable, noneffervescent, few charcoal fragments at 130cm., few thin black (10YR2/1) clay coats in pores, few thin light brownish gray (10YR6/2) silans on ped faces, heavily bioturbated, gradual boundary.	ML
157- 208 B3 (62- 82)	very dark grayish brown (10YR3/2) silt loam, with man. fine dark yellowish brown (10YR3/4) mottles, weak medium subangular blocky, friable, noneffervescent, few thin very dark brown (10YR2/2) clay coats in pores, few thin light brownish gray (10YR6/2) silans on ped faces, heavily bioturbated, gradual boundary.	ML
208- 229 A1b (82- 90)	ver. dark brown (10YR2/2) silt loam, with common fine dark yellowish brown (10YR3/4) mottles, moderate fine granular, very friable, noneffervescent, very heavy, bioturbated, clear boundary.	ML
229- 250 B2b (90- 98)	dark brown (10YR3/3) silt loam, with common fine dark yellowish brown (10YR3/4) mottles, weak medium subangular blocky, friable, noneffervescent, few thin very dark brown (10YR2/2) clay coats in pores, clear boundary.	ML
250- 268 B3b (98-106)	light olive brown (2.5Y5/4) silt loam to silt, with common fine dark yellowish brown (10YR3/6) mottles, weak coarse subangular blocky, friable, noneffervescent, few thin very dark brown (10YR2/2) clay coats in pores, abrupt boundary.	ML
268- 278 A1b2 (106-109)	dark gray (10YR4/1) silt loam, moderate medium subangular blocky, friable, noneffervescent, very highly variegated, heavily bioturbated and mixed, ver. porous, clear boundary.	ML
278- 350 (b2(MDU) (109-126)	thin, stratified light yellowish brown (2.5Y6/4) silt and light olive brown (2.5Y5/4) and dark grayish brown (2.5Y4/2) silt loam to silty clay loam, silt beds are weak to moderately laminated, with few fine dark yellowish brown (10YR4/6) mottles, slightly effervescent, abrupt boundary.	ML

MLC-15

Master core number: 487

Location: SE, NE, NW, Sec. 24, T16N, R14W, Morgan Co., 1/4 mi. west of MLC-14 35ft.

North of Hwy. 104

Landscape position: medial alluvial fan

Surface archeology: none

Soils mapped: Littleton silt loam

Elevation: 137.8m. (452ft.)

Cored by: David S. Leigh, 9-21-83

Described by: Edwin R. Hajos, 7-29-84

Depth in Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 59 A1 (0- 23)	black (10YR2/1) silt loam, weak fine subangular blocky, friable, noneffervescent, heavily bioturbated, gradual boundary.	ML
59- 75 A3 (23- 30)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, heavily bioturbated, gradual boundary.	ML
75- 103 B2 (30- 41)	dark yellowish brown (10YR4/4) and light olive brown (2.5Y5/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, common thin pores, moderately bioturbated, gradual boundary.	ML
103- 164 B3 (41- 65)	light olive brown (2.5Y5/4) and dark yellowish brown (10YR4/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, few thin dark brown (10YR3/3) silt and clay coats in pores, moderately bioturbated, abrupt boundary.	ML
164- 200 A1b (65- 79)	olive brown (2.5Y4/3) silt loam, moderate coarse subangular blocky, friable, noneffervescent, continuous thin dark brown (10YR3/3) clay coats in pores and thin pale brown (10YR6/3) silans on ped faces, gradual boundary.	ML
200- 224 B1b (79- 88)	olive brown (2.5Y4/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, continuous, continuous thin dark brown (10YR3/3) clay coats in pores and thin pale brown (10YR6/3) silt coats on ped faces, clear boundary.	ML
224- 248 Cb1 (88- 98)	finely mottled olive yellow (2.5Y6/6) and olive brown (2.5Y4/4) silt loam, weak subangular blocky, friable, noneffervescent, clear boundary.	ML
248- 327 MDU (98-129)	finely mottled light olive brown (2.5Y5/4) and light yellowish brown (2.5Y6/4) light silt loam to silt, weak subangular blocky, slightly effervescent, weak indication of some original thin bedding, clear boundary.	ML
327- 340 MDL (129-142)	finely mottled dark yellowish brown (10YR4/4) and olive brown (2.5Y4/4) silty clay loam, weak subangular blocky, very slightly effervescent, weak indication of bedding, common thin olive brown (2.5Y4/3) clay coats in pores, abrupt boundary.	ML

finely mottled light olive brown (2.5Y5/4) and light yellowish brown (2.5Y4/4) silt loam, weak subangular blocky, slightly effervescent, common thin olive brown (2.5Y4/3) clay coats in pores, very abrupt boundary.

dark grayish brown (2.5Y4/2) silt, clay loam, with many fine brown to dark brown (10YR4/3) Fe mottles, few fine Mn or Fe nodules, weak subangular blocky, firm, very slightly effervescent, clay coats as above, clear boundary.

light yellowish brown (2.5Y6/3) and light olive brown (2.5Y5/3) silt, with common fine yellowish brown (10YR5/8) mottles, massive, strongly effervescent, one large grayish brown (10YR5/2) krotovina of silt loam, abrupt boundary.

grayish brown (2.5Y5/2) silt, clay, with common fine yellowish brown (10YR5/6) mottles, massive, with few strong laminae, very slightly effervescent, clear to abrupt boundary.

light brownish gray (2.5Y6/2) and grayish brown (2.5Y5/2) silt, with common medium yellowish brown (10YR5/6) mottles, strongly laminated strongly, to violently effervescent at base, gradual boundary.

very dark grayish brown (2.5Y3/2) and light brownish gray (2.5Y6/2) silt and very fine sand, strongly laminated, violently effervescent, lighter zones slightly more abundant at depth, organic matter finely disseminated, few very fine sand laminae at base, refusal.

MLC-16

Master core number: 488
 Location: SW1/4, NE1/4, Sec. 23, T16N, R13W, Moreau Co., 50ft. north of Hwy. 104 and 45ft. east of county rd.
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soil: Worthen silt loam
 Elevation: 135.0m. (443ft.)
 Cored by: David S. Leish, 9-22-83
 Described by: Edwin R. Hobbie, 7-30-84

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 134 OL (0- 53)	solum, silt loam, gradual boundary	ML
134- 214 C (DU) (53- 84)	light olive brown (2.5Y5/4) silt loam, few thin beds of very dark grayish brown (10YR3/2) silt loam in lower 25%, weak subangular blocky, slightly effervescent, common thin to moderately thick very dark brown (10YR2/2) clay coats in pores, very abrupt boundary.	ML
214- 228 Bb (84- 90)	finely mottled dark grayish brown (2.5Y4/3) and olive brown (2.5Y4/4) silt loam, moderate coarse subangular blocky, noneffervescent, common thin very dark brown (10YR2/2) clay coats in pores, many thin very dark grayish brown (2.5Y3/2) clay and silt coats on ped faces, clear boundary.	ML
228- 312 Cb (DU) (90-123)	light olive brown (2.5Y5/4) silt, with many fine and medium and yellowish brown (10YR5/4) Fe mottles, massive, slightly effervescent, clayey silt last 10cm., very abrupt boundary.	ML
312- 323 DU (123-127)	brown to dark brown (7.5YR4/2) silty clay loam, with common fine olive gray (5Y5/2) and with few fine dark yellowish brown (10YR4/6) Fe mottles, massive, very slightly effervescent, clear boundary.	ML
323- 360 UL (127-142)	olive gray (5Y5/2) heavy loam, with few fine dark yellowish brown (10YR4/6) mottles, massive to weakly laminated at base, noneffervescent, abrupt boundary.	ML
360- 380 DU (142-150)	light olive brown (2.5Y5/3) medium sand, massive, slightly effervescent, abrupt boundary.	SP
380- 410+D/U (150-161)	olive gray (5Y5/2) heavy loam and light olive brown (2.5Y5/6) silt, and brown (7.5YR5/2) silt, and grayish brown (2.5Y5/3) medium sand, stratified, noneffervescent, refusal.	ML

MLC-17

Master core number: 459

Location: SW 1/4, NW 1/4, Sec. 24, T16N, R13W, Morgan Co., 45ft. north of Hw. 104 and 75ft. east of next field

Land-use position: medial alluvial fan

Surface archeology: none

SFS mapped soil: Morthen silt loam

Elevation: 136.6m. (448ft.)

Cored by: David S. Leish, 9-22-83

Described by: Edwin R. Harbo, 7-29-84

Depth, cm (in.) or Zone	Unified Soil Description	Classification
0- 33 Ap (0- 13)	very dark brown (10YR2/2) silt loam, moderate fine subangular blocky, friable, noneffervescent, abrupt boundary.	ML
33- 62 A1 (13- 24)	very dark brown (10YR2/2) silt loam, moderate fine granular, friable, noneffervescent, heavily bioturbated, clear boundary.	ML
62- 89 Bct (24- 35)	dark yellowish brown (10YR4/4) silt loam, moderate medium subangular blocky, friable, noneffervescent, many thin to moderately thick very dark brown (10YR2/2) silt and clay coats in pores and on ped faces, clear boundary.	ML
89- 141 Bst (35- 56)	dark yellowish brown (10YR4/4) silt loam, with many fine yellowish brown (10YR5/4) mottles, moderate coarse subangular blocky, friable, noneffervescent, few thin very dark brown (10YR2/2) silt and clay coats in pores and on ped faces, clear boundary.	ML
141- 157 C (56- 62)	yellowish brown (10YR5/4) silt loam, with many fine dark yellowish brown (10YR4/4) mottles, moderate coarse subangular blocky, friable, noneffervescent, less clay than 89-141cm., clear to abrupt boundary.	ML
157- 185 Alb1 (62- 73)	finely mottled dark brown (10YR3/3) and dark yellowish brown (10YR4/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, clay content similar to 89-141cm., clear boundary.	ML
185- 215 Bb1 (73- 85)	finely mottled pale brown (10YR6/3) and light light yellowish brown (2.5Y6/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, clay content similar to 141-157cm., gradual boundary.	ML
215- 229 C1b1(DL) (85- 90)	pale yellow (2.5Y7/4) coarse silt, with common fine and medium light olive brown (2.5Y5/4) mottles, massive, friable, noneffervescent, clear boundary.	ML
229- 259 C2b1(DU) (90-102)	pale yellow (2.5Y7/4) coarse silt, with few fine light olive brown (2.5Y5/4) mottles, weakly laminated very friable, strongly to violently effervescent, very abrupt boundary.	ML
259- 307 11B21b2 (102-121)	olive brown (2.5Y4/3) silt, clay loam, with few medium dark yellowish brown (10YR2/6) Fe mottles, weak subangular blocky, firm, slightly effervescent, some secondary carbonates near top of unit, weak indication of original stratification, thin, bedded, abrupt boundary.	CL
307- 312 111B22b2 (121-123)	pale brown (10YR6/3) silt loam, with common fine dark yellowish brown (10YR4/6) Fe mottles, weak subangular blocky, friable, slight, effervescent, very abrupt boundary.	ML
312- 331 1VB23b2 (123-130)	brown (10YR5/3) heavy silt loam, with common fine dark yellowish brown (10YR4/6) Fe mottles, moderate coarse subangular blocky, firm, very slightly effervescent, few thin brown (10YR5/3) clay coats in pores and on ped faces, very abrupt boundary.	ML
331- 370 VB24b2 (130-146)	dark grayish brown (10YR4/2) silty clay loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak subangular blocky, firm, noneffervescent, few thin dark grayish brown (10YR4/2) clay coats in pores, gradual boundary.	ML
370- 426 VB25b2 (146-168)	grayish brown (2.5Y5/2) silty clay loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak subangular blocky, firm, noneffervescent, few thin dark grayish brown (10YR4/2) clay coats in pores, abrupt boundary.	CL
426- 503 VIC1b2 (168-198)	grayish brown (2.5Y5/2) and light brownish gray (2.5Y6/2) clays, silt and silt, stratified and moderately laminated, with few fine yellowish brown (10YR5/6) Fe mottles, slightly effervescent, one zone of slightly heavier brown (7.5YR5/2) clayey silt, very abrupt boundary.	ML
503- 518 OU (198-204)	brown (7.5YR5/4) and reddish brown (5YR5/4) silty clay, with common fine yellowish brown (10YR5/4) Fe mottles, slight, effervescent, few thin grayish brown (2.5Y5/2) coats in very fine pores, very abrupt boundary.	CL
518- 530+OU (4-209)	olive yellow (2.5Y6/5) fine and very fine sand, with light olive brown (2.5Y5/4) and grayish brown (2.5Y5/2) silt and clayey silt strongly laminated, slightly effervescent, refusal.	SP

MLC-18

Master core number: 490
 Location: SE 1/4 NW 1/4 Sec. 24, T16N, R13W, Morgan Co., 35 ft. north of Hwy. 104 and
 1/2 mi. west of field entrance over ditch
 Landscape position: medial alluvial fan
 Surface archeology: none
 30% mapped soils: Northern silt loam
 Elevation: 138.1 m. (453 ft.)
 Dredged by: David S. Leigh, 9-23-84
 Described by: Edwin R. Hajic, 7-29-84

663- 712 DU
(261-280)712- 746 DU
(280-294)

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	
0- 25 Ap (0- 10)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, abrupt boundary.	ML	strongly laminated light brownish gray (2.5Y6/2) and ML grayish brown (2.5Y5/2) silt and coarse silt, with few large yellowish brown (10YR5/6) Fe mottles, strongly effervescent, abrupt boundary.
25- 60 A1 (10- 24)	black (10YR2/1) silt loam, weak fine granular, friable, noneffervescent, gradual boundary.	ML	strongly laminated very dark grayish brown (2.5Y3/2) ML and light brownish gray (2.5Y6/2), and grayish brown (2.5Y5/2) and very pale brown (10YR7/4) silt and coarse silt, few brown to dark brown (7.5YR4/2) laminae at base, slightly to strongly effervescent, organic laminae, abrupt boundary.
60- 84 A3 (24- 33)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, gradual boundary.	ML	dark brown (10YR3/3) medium sand and dark brown (10YR3/3) dark grayish brown (2.5Y4/2) silt and silty clay laminated with finer laminae more abundant at top, strongly effervescent, refusal.
84- 125 B2t (33- 49)	dark brown (10YR3/3) silt loam, weak coarse subangular blocky, friable, noneffervescent, common thin to moderately thick black (10YR2/1) clay coats in pores, many thin pale brown (10YR6/2) silt coats on ped faces, indication of weak thin bedding, gradual boundary.	ML	
125- 182 B3t (49- 72)	dark yellowish brown (10YR4/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, common thin to moderately thick black (10YR2/1) clay coats in pores, few thin pale brown (10YR6/2) silt coats on ped faces, gradual boundary.	ML	
182- 221 C1 (72- 87)	light olive brown (2.5Y5/5) silt loam, with many fine pale yellow (2.5Y7/4) mottles, weak subangular blocky, friable, noneffervescent, gradual boundary.	ML	
221- 325 MD (87-128)	light olive brown (2.5Y5/4) silt loam and olive brown (2.5Y4/4) silty clay loam, stratified with few weak laminae, slightly effervescent, few thin ver. dark brown (10YR2/2) clay coats in pores, and strong laminations at base, abrupt boundary.	ML	
325- 663 MD (128-261)	olive brown (2.5Y4/4) and olive brown (2.5Y4/3) silty clay loam and light yellowish brown (2.5Y6/4), light olive brown (2.5Y5/4), and grayish brown (2.5Y5/2) silt and silt loam, stratified in fines upward sequences, two major and some minor ones, silty clay loam has abrupt tops, silt and silt loam is strongly to moderately laminated, many yellowish brown (10YR5/6) mottles, silty clay loam is massive to subangular blocky throughout, noneffervescent to very slightly	ML	

MLC-19

Master core number: 401
 Location: SE, NW, NW, Sec. 24, 116N, R13W, Morgan Co., midwa. between MLC-17 and MLC-18
 Landscape position: medial alluvial fan
 Surface archeology: none
 Soil mapped soil: Northern silt loam
 Elevation: 136.9m. (449ft.)
 Cored by: David S. Leigh, 9-23-83
 Described by: Edwin R. Haeber, 7-29-84

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 32 Ap (0- 13)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, abrupt boundary.	ML
32- 57 A1 (13- 22)	very dark brown (10YR2/2) silt loam, moderate fine granular, friable, noneffervescent, moderately bioturbated, clear boundary.	ML
57- 94 Bst (22- 37)	dark yellowish brown (10YR4/4) silt loam, moderate medium subangular blocky, friable, noneffervescent, many thin very dark grayish brown (10YR3/2) silt and clay coats in pores and on ped faces, moderately bioturbated, clear boundary.	ML
94- 122 Bst (37- 52)	dark brown (10YR3/3) heavy silt loam, with many fine yellowish brown (10YR5/4) mottles, moderate medium columnar, friable, noneffervescent, many thin very dark grayish brown (10YR3/2) silt and clay coats in pores and on ped faces, clear boundary.	ML
132- 152 C1 (52- 60)	yellowish brown (10YR5/4) silt loam, with many fine dark yellowish brown (10YR4/4) and dark yellowish brown (10YR3/3) mottles, and few fine dark yellowish brown (10YR4/6) mottles, moderate coarse subangular blocky, friable, noneffervescent, common thin dark brown (10YR3/3) clay coats in pores, abrupt boundary.	ML
152- 186 A1b1 (60- 73)	dark brown (10YR3/3) silt loam, with few fine dark yellowish brown (10YR4/4) mottles, weak subangular blocky, friable, noneffervescent, common thin dark brown (10YR3/3) clay coats in pores, clear boundary.	ML
186- 210 Bt1 (73- 83)	light olive brown (2.5Y5/4) silt loam, with few fine yellowish brown (10YR5/6) and with many fine dark yellowish brown (10YR4/4) mottles, weak subangular blocky, friable, slightly effervescent, common thin dark brown (10YR3/3) clay coats in pores, clear boundary.	ML

210- 258 Cb1 (MUU)
 (83-102)

finely mottled light olive brown (2.5Y5/4) and
 light yellowish brown (2.5Y6/4) silt, weak subangular
 blocky, to massive at base, friable, very slightly
 effervescent, weakly laminated at base, very
 abrupt boundary.

258- 280 MUU
 (102-110)

light olive brown (2.5Y5/4) silt loam, with
 common fine dark yellowish brown (10YR4/6) Fe
 mottles, weak subangular blocky, firm, very
 slightly effervescent, clear boundary.

280- 340 DU
 (110-134)

mottled pale yellow (2.5Y7/4) and light yellowish
 brown (2.5Y6/4) silt, and olive brown (2.5Y4/4)
 silt, clay loam, stratified, slightly to strongly
 effervescent, moderate laminations in lower 20cm.,
 abrupt boundary.

340- 442 10B3b3
 (134-174)

dark grayish brown (2.5Y4/2) silt, clay loam,
 with many large dark yellowish brown (10YR3/6)
 mottles, weak subangular blocky, firm,
 noneffervescent, common thin very dark grayish
 brown (2.5Y3/2) and dark grayish brown (2.5Y4/2)
 clay coats in pores, clear boundary.

442- 548 10C3 (DUU)
 (174-216)

light gray (2.5Y7/2) and light brownish gray
 (2.5Y6/2), and light olive brown (2.5Y5/4) silt
 and very fine sand and minor silty clay loam, very
 strongly laminated, strongly effervescent, few
 zones of dark yellowish brown (10YR3/6) Fe
 staining near top, very abrupt boundary.

548- 563 UU
 (216-222)

dark gray (5Y4/1) to black (5Y2.5/1), and organic
 dark brown (7.5YR4/2) in the last 2cm. silt,
 moderately laminated, noneffervescent, abundant
 very fine organic matter, very abrupt boundary.

563- 570 OU
 (222-224)

brown to dark brown (7.5YR4/4) silt and medium
 and coarse sand, few pea sized pebbles, slightly
 to strongly effervescent, clear boundary.

570- 575+DU
 (224-226)

light olive brown (2.5Y5/4) silt, medium sand,
 strongly effervescent, refusal.

SP

MLC-20

Master core number: 423
 Location: SE, NE, NW, Sec. 23, T16N, R13W, Morgan Co., 20 ft. east of drainage ditch and 60 ft. north of Hwy. 104
 Landscape position: Bug Island channel
 Surface archeology: none
 SCS mapped soils: Lathrop sand, loam
 Elevation: 134.4m. (441 ft.)
 Cored by: David S. Leish, 9-30-83
 Described by: Edwin R. Havig, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 30 Ap (0- 12)	black (10YR2/1) silt loam, weak fine granular, friable, noneffervescent, abrupt boundary.	ML
30- 55 A3 (12- 22)	very dark gray (10YR3/1) silt loam, weak medium subangular blocky, friable, noneffervescent, clear boundary.	ML
55- 82 B1 (22- 32)	very dark gray (10YR3/1) silt loam, moderate medium subangular blocky, friable, noneffervescent, clear boundary.	ML
82- 111 B2t (32- 44)	dark brown (10YR3/3) silt, clay loam, with many fine brown to dark brown (7.5YR4/4) mottles, strong medium columnar, firm, noneffervescent, continuous thin very dark gray (10YR3/1) clay coats in pores and on ped faces, clear boundary.	CL
111- 162 B3t (44- 64)	brown to dark brown (7.5YR4/4) silty clay loam, with many fine dark yellowish brown (10YR4/4) mottles, moderate coarse columnar, firm, noneffervescent, many thin very dark gray (10YR3/1) clay coats on ped faces and in pores, abrupt boundary.	CL
162- 202 11C (OL) (64- 80)	stratified very dark gray (10YR3/1) loam, brown to dark brown (10YR4/3) medium sand and dark gray (10YR4/1) silty medium sand, very friable to single grain, loose, noneffervescent, abrupt boundary.	ML
202- 536 DL (80-212)	light olive brown (2.5Y5/4) medium sand, noneffervescent, abrupt boundary.	SF
536- 605 OL (212-238)	dark brown (10YR3/3) silty medium sand with few very fine pebbles, noneffervescent, abrupt boundary.	SF
605- 672 DL (238-265)	light olive brown (2.5Y5/4) poorly sorted medium to very coarse sand with many very fine pebbles, noneffervescent, abrupt boundary.	SW
672- 720 OL (265-283)	stratified dark brown (10YR3/3) silty medium and coarse sand with few very fine pebbles, noneffervescent, abrupt boundary.	SW
720- 746+DL (283-294)	olive brown (2.5Y4/4) poorly sorted medium to very coarse sand with many very fine pebbles, noneffervescent, refusal.	SW

MLC-21

Master core number: 493
 Location: SW, NE, NW, Sec. 23, T16N, R13W, Morgan Co., midway between MLC-16 and MLC-20 at field boundary
 Landscape position: distal alluvial fan--Bug Island channel
 Surface archeology: none
 SCS mapped soils: Worthen silt loam
 Elevation: 134.7m. (442 ft.)
 Cored by: David S. Leish, 9-30-83
 Described by: Edwin R. Havig, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 97 OL (0- 38)	solum, silt loam, gradual boundary.	ML
97- 155 C(DU) (38- 61)	light olive brown (2.5Y5/4) silt loam to silt, with few fine dark yellowish brown (10YR4/6) Fe mottles, weak subangular blocky, slightly effervescent, abrupt boundary.	ML
155- 183 MDU (61- 72)	finely mottled light yellowish brown (2.5Y6/4) and light brownish gray (2.5Y6/2) silt, and finely mottled light olive brown (2.5Y5/4) and olive brown (2.5Y4/4) heavy silt loam, stratified, with many fine dark yellowish brown (10YR3/6) Fe mottles, strongly to violently effervescent, variable, abrupt boundary.	ML
183- 230 11Bb (72- 91)	dark grayish brown (2.5Y4/2) silty clay loam, with many fine dark yellowish brown (10YR3/6) Fe mottles, weak subangular blocky, strongly effervescent, few thin dark grayish brown (2.5Y4/2) clay coats in pores, gradual boundary.	CL
230- 322 OL (91-127)	dark grayish brown (10YR4/2) heavy silt loam, with many fine dark yellowish brown (10YR3/6) Fe mottles, massive, noneffervescent to very slightly effervescent, variables, few protofina of silt from 255-283cm., abrupt boundary.	ML
322- 371 DU (127-146)	grayish brown (2.5Y5/2) silt, with common fine and medium dark yellowish brown (10YR3/6) Fe mottles, massive, to moderately laminated at base, strongly effervescent, two large protofina ? at top of unit slightly redder than (10YR5/2), few laminae of poorly sorted medium and fine pebbles in last 15cm., very abrupt boundary.	ML
371- 549+DU (146-216)	light olive brown (2.5Y5/4) medium and coarse sand, with few thin grayish brown and very dark grayish brown (2.5Y5/2 and 2.5Y2/2) coarse silt to very fine sandy silt thin laminae in last 70cm., strongly effervescent, refusal.	SF

MLC-22

Master core number: 4/4

Location: SW. SE. 1/4 Sec. 23, T16N, R13W, Morgan Co., midway between MLC-6 and MLC-8 north side of hardtop road and (right) west of field entrance.

Landscape position: distal alluvial fan on Blue Island channel

Surface archeology: none

SCS mapped soil: LaHogue sand, loam

Elevation: 134.7m. (442ft.)

Cored by: David S. Leitch, 9-30-83

Described by: Edwin R. Haisic, 8-5-84

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 34 AI (0- 13)	black (10YR2/1) silt loam, weak medium subangular blocks, friable, noneffervescent, abrupt boundary.	ML
34- 193 OL (13- 76)	buried solum of LaHogue sand, loam, clear boundary.	SP
193- 238 C (MOL) (76- 94)	dark brown (10YR3/3) fine sand, loam, with many medium and coarse dark yellowish brown (10YR3/4), dark yellowish brown (10YR3/6), dark yellowish brown (10YR4/6), pale brown (10YR2/3) Fe mottles, weakly stratified with weak coarse subangular blocks, noneffervescent, clear boundary.	SP
238- 277 MOL (94-100)	grayish brown (2.5Y5/2) fine sandy silt, with many fine and medium dark yellowish brown (10YR4/6) and dark yellowish brown (10YR4/4) Fe mottles, weakly stratified noneffervescent, some sandier voids, very abrupt boundary.	SP
277- 357 (U) (100-141)	olive gray (5Y5/2) silt, with common medium brown (7.5Y5/2) very faint mottles, strongly laminated strongly effervescent, few to common light yellowish brown (2.5Y6/4) and olive yellow (2.5Y6/6) fine sand laminae increasing in frequency with depth, very abrupt boundary.	ML
357- 425+00 (141-167)	light olive brown (2.5Y5/6) fine sand, with few grayish brown (2.5Y5/2) mottles, with slight reddish brown hues, silt, clay laminae strongly effervescent, refusal.	SP

MLC-23

Master core number: 4/5

Location: SW. NW. 1/4 Sec. 23, T16N, R13W, Morgan Co., 55ft. north of Hwy. 104 and 35ft. east of field boundary.

Land take position: Bluffs Terrace

Surface archeology: none

SCS mapped soil: LaHogue sand, loam

Elevation: 134.7m. (442ft.)

Cored by: David S. Leitch, 10-5-83

Described by: Edwin R. Haisic, 7-30-83

Depth, cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 130 OL (0- 51)	solum, fine sandy loam, clear boundary	SP
130- 180+0L (51- 71)	brown to dark brown (10YR4/3) poorly sorted fine to very coarse sand, many very fine and fine pebbles, top of unit has medium pebbles, subrounded, refusal.	SM

MLC-24

Master core number: 496
 Location: SW, SE, Sec. 26, T16N, R13W, Moran Co., southeast corner of H. Minner's property.
 Landscape position: medial alluvial fan
 Surface archeology: none
 SCS mapped soil: Littleton silt loam
 Elevation: 134.7m. (442ft.)
 Cored by: David S. Leish, 10-5-83
 Described by: Edwin R. Haric, 8-1-84

288- 300 DU (113-118) light yellowish brown (2.5Y6/4) poorly sorted fine sand, few thick laminae of very dark gray (5Y3/1) coarse silt, as below, slightly effervescent, very abrupt boundary. SF

300- 311 DU (118-122) very dark gray (5Y3/1) coarse silt, massive, violently effervescent, very abrupt boundary. ML

311- 404 DU (122-159) grayish brown (10YR5/2) moderately sorted medium and coarse sand, very few very dark gray (5Y3/1) coarse laminae toward base, slightly effervescent, very abrupt boundary. SF

404- 550+DU (159-217) stratified very dark gray (5Y3/1) silt, massive to strongly laminated, and strongly laminated very dark grayish brown (10YR3/2) and light yellowish brown (2.5Y6/4) silt and very fine sand, and dark yellowish brown (10YR3/4) and light yellowish brown (2.5Y6/4) fine sand and loam, fine sand, violent, effervescent, some very dark grayish brown (10YR3/2) silt has uncarbonized organic matter, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	
0- 34 C (0m 13)	very dark grayish brown (10YR3/2) to very dark brown (10YR2/2) heavy silt loam, massive, friable, noneffervescent, abrupt boundary.	ML	
34- 65 Alb (13- 26)	black (10YR2/1) heavy silt loam, moderate fine subangular block., firm, noneffervescent, clear boundary.	ML	
65- 104 Btb (26- 41)	very dark brown (10YR2/2) heavy silt loam, moderate medium columnar, firm, noneffervescent, clear boundary.	ML	
104- 180 B2bt (41- 71)	dark grayish brown (2.5Y4/3) silt, with many fine yellowish brown (10YR5/6) Fe mottles, moderate coarse subangular block., noneffervescent, many very dark gray (10YR2/2) heavy silt loam, large krotovinas, many thin to moderately thick very dark grayish brown (10YR3/2) silt and clay coats in pores, few on ped faces, gradual boundary.	ML	
180- 211 B3bt (71- 83)	finel., mottled olive brown (2.5Y4/4) and very dark grayish brown (2.5Y3/4) silty clay loam, with many fine yellowish brown (10YR5/6) Fe mottles, moderate coarse subangular block., firm, noneffervescent, common thin very dark grayish brown (10YR3/2) and very dark brown (10YR2/2) silt and clay coats on ped faces, gradual boundary.	CL	
211- 266 Cb (83-105)	dark grayish brown (2.5Y4/2) and light olive brown (2.5Y5/4) silt loam, with common fine and medium dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocky, very slightly to slightly effervescent, common thin dark grayish brown (2.5Y4/2) and very dark grayish brown (2.5Y3/2) clay coats in pores, most of lower half of unit is one large krotovina--fill consists of very dark grayish brown (2.5Y3/2) loam to silty clay loam, gradual boundary.	ML	
266- 288 MUu (105-113)	olive gray (5Y5/2) silt, clay, to clay at base, with man. fine dark yellowish brown (10YR4/6) Fe mottles, massive, slightly effervescent, sand content increases with depth, very abrupt boundary.	CL	

MLC-25

Master core number: 497
Location: NE, NE, NE, Sec. 15, T16N, R13W, Morgan Co., 400ft. south of levee and 15ft. west of fence line
Landscape position: Bug Island channel
Surface archeological none
Soils mapped: Beaucaup silty clay loam
Elevation: 132.3m. (434ft.)
Cored by: David S. Leigh, 10-5-83
Described by: Edwin R. Hajic, 8-4-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 24 Ap (0- 9)	very dark brown (10YR2/2) silty clay loam, compacted, firm, nonferrous, abrupt boundary.	CL
24- 44 B1 (9- 17)	very dark brown (10YR2/2) silty clay loam, moderate fine subangular blocky, firm, nonferrous, clear boundary.	CL
44- 73 B1lt (17- 29)	very dark grayish brown (10YR3/2) clay loam, with many fine dark yellowish brown (10YR3/4) mottles, moderate medium prismatic, firm, nonferrous, continuous very dark gray (10YR3/1) clay coats on ped faces and in pores, clear boundary.	CL
73- 100 B2lt (29- 39)	dark grayish brown (10YR4/2) clay loam, with many fine dark yellowish brown (10YR3/4) mottles, moderate medium prismatic, firm, nonferrous, many thin very dark gray (10YR3/1) clay coats on ped faces and in pores, gradual boundary.	CL
100- 135 B3t (39- 53)	brown to dark brown (7.5YR4/2) sandy clay loam to sand, loam at base, with many fine dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/6) mottles, weak coarse subangular blocky, firm, nonferrous, few thin very dark grayish brown (10YR3/2) clay coats on ped faces, clear boundary.	CL
135- 150 C1(OL) (53- 59)	very dark grayish brown (10YR3/2) loamy sand, massive, very friable, nonferrous, sand is medium to coarse, poorly sorted, with few very fine pebbles, top of unit marked by a fine pebble band, clear boundary.	SP
150- 284 OL (59-112)	dark brown (10YR3/3) to brown (10YR5/3) at base medium sand with small amount of silt, no distinct stratification seen, nonferrous, clear boundary.	SP
284- 305 OL (112-120)	dark brown (10YR3/3) loam, sand, no stratification seen, nonferrous, clear boundary.	SP
305- 400+OL (120-157)	dark yellowish brown (10YR3/4) and dark brown (10YR3/3) medium and fine sand, nonferrous, refusal.	SP

MLC-26

Master core number: 498
Location: NE, NE, NE, Sec. 15, T16N, R13W, Morgan Co., at the northeast corner of a rectangular block of oak trees
Landscape position: Bluffs Terrace
Surface archeological none
Soils mapped: Alvin fine sand, loam
Elevation: 134.7m. (442ft.)
Cored by: David S. Leigh, 10-5-83
Described by: Edwin R. Hajic, 8-4-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 74 OL (0- 29)	solum, fine sand, clear boundary	SP
74- 152 OL (29- 60)	solum, fine sand, loam, clear boundary.	SP
152- 300 OL (60-118)	dark yellowish brown (10YR3/4), dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) loam, sand with strata of sand and sand, loam, stratified sand is nonferrous, sand is medium but only moderately sorted, from 201-225cm. very fine and fine pebbles are common, indeterminate boundary.	SP
300- 320+OL (118-126)	dark yellowish brown (10YR4/4) moderately sorted medium sand, nonferrous, refusal.	SP

Comments: none

MLC-27

Master core number: 499

Location: NW, NE, Sec. 15, T16N, R13W, Morgan Co., at the northwest corner of

the block of oak trees

Landscape position: Bath Terrace

Surface archeology: none

SCS mapped soil: Plainfield loamy fine sand

Elevation: 135.3m. (444ft.)

Cored by: David S. Leigh, 10-5-83

Described by: Edwin R. Hajic, 8-4-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 111 OL (0- 44)	solum, fine sand, with some silt, clear boundary	SP
111- 284+OL (44-112)	dark yellowish brown (10YR4/4) fine and medium sand, common dark yellowish brown (10YR3/6) iron stained bands, noneffervescent, refusal.	SP

MLC-28

Master core number: 500

Location: SE, NE, NW, Sec. 25, T16N, R13W, Morgan Co., 35ft. south of Beauchamp Rd.

and 10ft. west of wheat field boundary at first telephone pole west of

Highway 100

Landscape position: medial alluvial fan

Surface archeology: none

SCS mapped soil: Northern silt loam

Elevation: 140.8m. (462ft.)

Cored by: David S. Leigh, 10-4-83

Described by: Edwin R. Hajic, 8-5-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 38 C1 (0- 15)	dark brown (10YR3/3) silt loam, weak medium subangular blocky, noneffervescent, clear boundary.	ML
38- 193 OL (15- 76)	buried solum, silt loam, clear boundary	ML
193- 319 Cb(MDL) (76-126)	olive brown (2.5Y4/4) and olive brown (2.5Y4/3) silt loam, with many fine dark grayish brown (2.5Y4/2) mottles in lower half, weak coarse subangular blocky, noneffervescent, clear boundary.	ML
319- 432 MDU (126-170)	light olive brown (2.5Y5/4) and grayish brown (2.5Y5/2) silt, with many fine yellowish brown (10YR5/6) mottles, weakly, stratified, slightly effervescent, clear boundary.	ML
432- 448 MDU (170-176)	grayish brown (2.5Y5/2) heavy silt, with many fine yellowish brown (10YR5/6) mottles, slightly effervescent, clear boundary.	ML
448- 632 MDU (176-249)	grayish brown (2.5Y5/2) silt, with many fine and medium yellowish brown (10YR5/6) mottles, moderately to strongly laminated at base, strongly effervescent, abrupt boundary.	ML
632- 653 DL (249-257)	black (2.5Y2/0) organic silt, strongly laminated, noneffervescent, very abrupt boundary.	ML
653- 685 OL (257-270)	dark yellowish brown (10YR4/4) fine sand, few grayish brown (2.5Y5/2) silt laminae, noneffervescent, indeterminate boundary.	SP
685- 810+DL (270-319)	black (2.5Y2/0) and very dark grayish brown (2.5Y3/2) organic silt, clay, few fine sand laminae, organic, noneffervescent, refusal.	OL

MLC-29

Master core number: 501

Location: SE, NE, NW, Sec. 14, T16N, R13W, Morgan Co., 35ft. west of hardtop rd. and 75ft. south of southernmost guard post on west side of road

Landscape position: Bug Island channel

Surface archeology: none

SFS mapped soil: fine silt, clay loam

Elevation: 133.5m. (438ft.)

Cored by: David S. Leish, 10-11-83

Described by: Edwin R. Hajic, 8-3-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 20 A1 (0- 8)	black (10YR2/1) silt loam, moderate fine granular, friable, noneffervescent, clear boundary.	ML
20- 40 B1 (8- 16)	finel, mottled var., dark grayish brown (10YR3/2) and light olive brown (2.5Y5/4) silt loam, moderate fine subangular blocky, friable, noneffervescent, moderately bioturbated, clear boundary.	ML
40- 85 B2 (16- 33)	light yellowish brown (2.5Y6/4) silt loam, with many fine olive yellow (2.5Y6/6) mottles, weak medium subangular blocky, strong to violently effervescent, few coarse carbonate concentrations, abrupt boundary.	ML
85- 238 C (MDU) (33- 94)	light olive brown (2.5Y5/4) and light olive brown (2.5Y5/3) silt and coarse silt, with many medium and fine light olive brown (2.5Y5/6) mottles, slightly to strongly effervescent, moderately to strongly laminated, common light yellowish brown (2.5Y6/4) very fine sand laminae, top of unit marked by 4cm. zone of strongly laminated very dark grayish brown (2.5Y3/2) silt, very abrupt boundary.	ML
238- 304 DU (94-120)	grayish brown (2.5Y5/2) silt, with common fine and medium dark yellowish brown (10YR4/6) Fe mottles, massive, slight, effervescent, gradual boundary.	ML
304- 336 UU (120-152)	dark grayish brown (2.5Y4/2) and dark gray (5Y4/1) silt, coarse silt and fine sand, moderately to strongly laminated, strongly effervescent, very abrupt boundary.	ML
336- 520 D/UU (152-205)	dark grayish brown (2.5Y4/2) and minor dark greenish gray (5Y4/1) fine and medium sand, stratified, common silt, fine sand and coarse fine sand and clay laminae, strongly effervescent, few zones with uncarbonized organic matter, gradual boundary.	SP
520- 600+DU (205-226)	dark grayish brown (2.5Y4/2) poorly sorted coarse sand, abundant pebbles, few zones with uncarbonized organic matter, strong, effervescent, refusal.	SP

MLC-30

Master core number: 502

Location: SE, NE, NW, Sec. 14, T16N, R13W, Morgan Co., 30ft. east of ditch and

350ft. south of levee

Landscape position: Bug Island channel

Surface archeology: none

SFS mapped soil: Darwin silty clay

Elevation: 134.7m. (442ft.)

Cored by: David S. Leish, 10-11-83

Described by: Edwin R. Hajic, 8-4-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 26 Ap (0- 10)	very dark brown (10YR2/2) silt loam, weak fine subangular blocky to massive, friable, noneffervescent, abrupt boundary.	ML
26- 43 A3 (10- 17)	very dark brown (10YR2/2) silt loam, moderate fine subangular blocky, friable, noneffervescent, clear boundary.	ML
43- 72 B2 (17- 28)	dark grayish brown (2.5Y4/2) silt loam, with many fine olive brown (2.5Y4/4) mottles, moderate medium subangular blocky, friable, noneffervescent, common thin very dark brown (10YR2/2) silt and clay coats on ped faces and in pores, clear boundary.	ML
72- 124 B3 (28- 49)	grayish brown (2.5Y5/2) silt loam, with many fine light olive brown (2.5Y5/6) mottles, weak medium subangular blocky, friable, very slight, effervescent, few thin dark grayish brown (10YR4/2) clay coats in pores, very abrupt boundary.	ML
124- 227 C (MDU) (49- 89)	grayish brown (2.5Y5/2) silt, with common fine light olive brown (2.5Y5/6) and dark yellowish brown (10YR4/6) mottles, moderately to strongly laminated at base, common very fine sand laminae, strongly effervescent, very abrupt boundary.	ML
227- 240 UU (89- 94)	greenish gray (5GY5/1) silt, compact, massive with few very fine sand laminae, very slightly effervescent, very abrupt boundary.	ML
240- 248 U/DU (94- 98)	olive brown (2.5Y4/4) and brown (7.5YR5/2), and greenish gray (5GY5/1) coarse silt, massive, slightly effervescent, abrupt boundary.	ML
248- 255 UU (98-100)	slightly darker than olive (5Y4/3) coarse silt, massive, slightly effervescent, common fine pores with Fe linings, few vugs filled with medium sand from below, abrupt boundary.	ML
255- 300+DU (100-118)	light yellowish brown (2.5Y6/4) fine and medium sand, stratified, slightly to strongly effervescent at base, common thin to thick laminae of 2.5Y5/2, 5Y4/2, 5Y4/3) silt, loam and silt, clay, refusal.	SP

MLC-31

Master core number: 503

Location: SW1/4, NW1/4, Sec. 13, T16N, R13W, Moreau Co., 25ft. east of drainage ditch due east of big tree in front yard of farm house

Landscape position: distal alluvial fan--Bus Island channel

Surface archeology: none

SCS mapped soil: Beaumont silt, clay loam

Elevation: 139.1m. (456ft.)

Cored by: David S. Leigh, 10-12-83

Described by: Edwin R. Hajic, 8-3-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-169 OL (0-67)	solum, silty clay loam, clear boundary	CL
169-235 Cs(MDL) (67-93)	dark grayish brown (2.5Y4/2) to olive gray (5Y5/2) at base heavy loam to fine sandy loam, with man. fine dark yellowish brown (10YR4/6) Fe mottles, weakly stratified, noneffervescent, clear boundary.	ML
235-308 UU (93-121)	olive gray (5Y5/2) silt and grayish brown (2.5Y5/2) sand, strongly laminated mostly with silt, towards base some laminae approach (7.5YR5/2) color, with many fine and medium dark yellowish brown (10YR4/6) Fe mottles, strong, effervescent, abrupt boundary.	ML
308-360 DU (121-142)	light yellowish brown (2.5Y6/4) very fine sand, very slightly effervescent, indeterminate boundary.	SP
360-460 DU (142-181)	olive brown (2.5Y4/4) fine and medium sand, slightly effervescent, indeterminate boundary.	SP
460-510+DU (181-201)	light olive brown (2.5Y5/4) medium sand, slightly effervescent, very few dark gray (5Y4/1) coarse silt and silt laminae, refusal.	SP

MLC-32

Master core number: 504

Location: SE, NE, NE, Sec. 13, T16N, R13W, Morgan Co., 125ft. west of Hwy. 100 and directly west of 5th powerline pole on Willow creek levee

Landscape position: distal alluvial fan

Surface archeology: none

Soils mapped: Beaucaup silt, clay loam

Elevation: 134.4m. (441ft.)

Cored by: David S. Leish, 10-13-83

Described by: Edwin R. Harjo, 8-2-84

388- 620 DUU
(153-244)

dark gray, (5Y4/1) silt and fine sand, silts are strongly laminated, strongly effervescent, indeterminate boundary.

ML

620- 735+UU
(244-289)

dark gray, (5Y4/1) pebbly coarse sand and silt, stratified, pebbles are medium to very fine, subrounded, poorly sorted, mottles, violently effervescent, refusal.

SW

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 28 A1 (0- 11)	black (10YR2/1) silt loam, weak fine granular, friable, strongly effervescent, clear boundary.	ML
28- 53 B1 (11- 21)	very dark grayish brown (10YR3/2) silt loam, moderate medium subangular blocky, friable, slightly effervescent, gradual boundary.	ML
53- 112 B2t (21- 44)	very dark grayish brown (2.5Y3/3) heavy silt loam, with man. fine dark yellowish brown (10YR4/6) Fe mottles, moderate coarse subangular blocky, firm, slightly effervescent, many thin very dark grayish brown (2.5Y3/2) clay coats on ped faces, gradual boundary.	ML
112- 144 B3t (44- 57)	light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/4) silt loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, firm, slightly effervescent, one krotovina of very dark grayish brown (2.5Y3/2) silt loam, clear boundary.	ML
144- 198 11B32t (57- 78)	olive (5Y4/3) silt, clay loam, with many fine and medium dark yellowish brown (10YR4/6) Fe and with common fine brown (7.5YR5/4) mottles, weak coarse subangular blocky, noneffervescent, few thin dark gray (5Y4/1) clay coats on ped faces and in pores, one subrounded chert pebble at 153cm., clear boundary.	ML
198- 253 11C (MDU) (78-100)	olive gray, (5Y5/2) silt loam to clay at base, with man. fine dark yellowish brown (10YR4/6) Fe mottles, massive, firm, slightly effervescent, few thin dark gray (5Y4/1) clay coats in pores, few krotovina of fine sand, loam, sand and clay both increase with depth, clear boundary.	ML
253- 313 UU (100-123)	dark olive gray (5Y3/2) and very dark gray (5Y3/1) silt and fine sandy silt, and pale brown (10YK6/3) fine sand, moderately to strongly laminated, strongly effervescent, very abrupt boundary.	ML
313- 368 DU (123-153)	light brownish gray (10YR6/2) fine sand with few dark olive gray (5Y3/2) thick silt laminae, strongly effervescent, very abrupt boundary.	SF

MLC-33

Master core number: 505
 Location: SE 1/4 NW 1/4 Sec. 13, T16N, R13W, Morgan Co., 1/4mi. due west of MLC-32
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soils: Beaucaire silt, cla. loam
 Elevation: 134.1m. (440ft.)
 Core: David S. Leish, 10-13-83
 Described by: Edwin R. Harris, 8-3-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 34 A1 (0- 13)	black (10YR2/1) silt loam, weak fine granular, friable, noneffervescent, clear boundary.	ML
34- 74 B1 (13- 29)	very dark gray (10YR3/1) silt, clay loam, moderate medium columnar breaking to moderate fine subangular blocky, firm, very slightly effervescent, gradual boundary.	CL
74- 132 B2ts (29- 52)	dark gray (10YR4/1) silt, clay loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, moderate coarse subangular blocky, firm, very slightly effervescent, many thin black (10YR2/1) clay coats on ped faces and in pores, gradual boundary.	CL
132- 163 B3ts (52- 64)	grayish brown (2.5Y5/2) silt loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, very slightly effervescent, many thin dark grayish brown (2.5Y4/2) coats in pores, one large very dark gray (10YR3/1) heavy silt loam krotovina, gradual boundary.	ML
163- 236 Cg (64- 93)	light brownish gray (2.5Y6/2) silt loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky to massive at base, very slightly to slightly effervescent, common grayish brown (2.5Y5/2) clay coats in pores, few large very dark gray (10YR3/1) heavy silt loam krotovina, abrupt boundary.	ML
236- 277 MDU (93-109)	grayish brown (2.5Y5/2) silty clay, with many fine dark yellowish brown (10YR4/6) Fe mottles, massive, very slightly effervescent, clay increases with depth, very abrupt boundary.	CL
277- 330+UU (109-130)	very dark gray (5Y3/1) silt, and grayish brown (2.5Y5/2) fine sand, stratified, strong, effervescent, few fine uncarbonized organic matter pieces in silt, refusal.	ML

Master core number: 506
 Location: SE 1/4, NW 1/4, Sec. 13, T16N, R13W, Morgan Co., 10ft. west of field ditch
 on west side of field road approx. 50ft. north of south end of ditch
 Landscape Position: Bus Island Channel
 Surface archeology: none
 Silt mapped soil: Beauvois silt, clay loam
 Elevation: 134.1m. (440ft.)
 Cored by: David S. Leigh, 10-14-84
 Described by: Edwin R. Hailo, 8-3-84

297- 380+DU
 (117-150)

pale yellow (2.5Y7/4) fine sand with few thin
 laminae of dark gra. (5Y4/1) coarse silt and silt,
 strongly effervescent, one silt unit has
 abundant fine uncarbonized organic matter at
 about 320cm. and one strongl. laminated silt unit
 at 370-377cm., refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 30 AF (0- 12)	very dark brown (10YR2/2) silt, clay loam, weak fine granular, very slightly effervescent, clear boundary.	CL
50- 58 B1 (12- 23)	black (10YR2/1) silty clay loam, moderate medium columnar, noneffervescent, common zone of shell fragments at top of unit, gradual boundary.	CL
58- 84 B2t (23- 35)	very dark gra. (10YR3/1) silt, clay loam, moderate medium and coarse columnar, noneffervescent, many thin black (10YR2/1) clay coats on ped faces and in pores, gradual boundary.	CL
89- 120 B31st (35- 47)	dark gra. (10YR4/1) silty clay, common fine dark yellowish brown (10YR4/6) mottles, moderate coarse subangular blocky, noneffervescent, common thin very dark gray (10YR3/1) clay coats on ped faces and in pores, clear boundary.	CL
120- 151 B3-2st (47- 59)	dark gra. (10YR4/1) silt loam, moderate coarse subangular blocky, very slightly effervescent, few thin very dark gra. (10YR3/1) silt, clay loam krotovina, abrupt boundary.	ML
151- 195 C9 (MDU) (59- 77)	grayish brown (2.5Y5/2) fine sand, lam. with common medium brown (7.5YR5/2) and with few fine dark yellowish brown (10YR4/6) Fe mottles, stratified, slightly effervescent, few thin dark gray (10YR2/1), clay coats in pores, very abrupt boundary.	SF
195- 206 DU (77- 81)	light brownish gray (2.5Y6/2) fine sand, few grayish brown (2.5Y5/2) silt laminae, slightly effervescent, abrupt boundary.	SF
206- 243 UU (81- 98)	olive gray (5Y5/2) silt and coarse silt, and dark grayish brown (2.5Y4/2) fine sand, with many fine dark yellowish brown (10YR4/6) Fe mottles in the top 6cm., moderately laminated, slightly effervescent, fine sand also located in some pores and vugs, very fine shell fragments, abrupt boundary.	ML
243- 297 UU (98-117)	dark gray (5Y4/1) coarse silt and silt, and light gray (10YR7/2) fine sand, strongly laminated with some of the thicker silt units being massive, strongly to violently effervescent, very abrupt boundary.	ML

MLC-35

Master core number: 507
 Location: SW1/4NW1/4, Sec. 13, T16N, R13W, Moreau Co., 0.5 ft. east of Mr. Dunnever's driveway, due south of small equipment shed on the other side of the lawn, 40 ft. north of telephone pole with transformer
 Landscape position: dune
 Surface archeology: none
 SCS mapped soils: Spearra loam, sand
 Elevation: 134.7m. (442 ft.)
 Corred by: David S. Leigh, 10-14-83
 Described by: Edwin H. Haidich, 8-3-84

402- 430 UU
 (158-169)
 430- 455+DU
 (169-178)

dark gray (5Y4/1) silt to fine sand, silt at base, massive with few weak laminar, strongly effervescent, 417-420cm, laminated as 324-402cm, ver., few fine pieces of organic matter, very abrupt boundary.
 light brownish gray (2.5Y6/2) and grayish brown (2.5Y5/2) fine sand, moderately laminated, few silt and coarse fine sand laminations, strongly effervescent, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 94 OL (0- 37)	solum, loamy fine sand, clear boundary	SF
94- 121 C (37- 48)	light yellowish brown (2.5Y6/4) fine sand, single grain, loose, noneffervescent, clear boundary.	SF
121- 132 OL (48- 52)	brown to dark brown (10YR4/3) loam, fine sand, very weak thin bedding, noneffervescent, abrupt boundary.	SF
132- 157 MDL (52- 62)	dark gray (10YR4/1) light clay loam, with many fine dark yellowish brown (10YR3/4) Fe mottles, noneffervescent, sand is fine and medium, very abrupt boundary.	CL
157- 181 0/ML (62- 72)	thick, laminated very dark grayish brown (10YR3/2) CL and olive (5Y5/3) clay loam and sand, loam, (variegated colors), noneffervescent, abrupt boundary.	CL
182- 220 MDL (72- 87)	olive (5Y5/3) heavy loam, with many medium and fine olive brown (2.5Y4/4) and dark yellowish brown (10YR4/6) Fe mottles, noneffervescent, two faint mottles approaching brown (7.5YR5/2), massive, common zones of sand, loam from above filling vugs, very fine and fine pores, gradual boundary.	ML
220- 279 MDU (87-110)	grayish brown (2.5Y5/2) coarse silt to silt at base, ML with many fine and medium dark yellowish brown (10YR4/6) Fe mottles, faint mottles tending to brown (7.5YR5/2), weak fine laminations at top to massive at base, strongly to violently effervescent, very abrupt boundary.	ML
279- 324 UU (110-126)	dark olive gray (5Y3/2) silt, massive, strongly effervescent, very abrupt boundary.	ML
324- 402 DU (126-158)	dark grayish brown (2.5Y4/3) and dark grayish brown (2.5Y4/2) coarse silt, silt, light yellowish brown (2.5Y6/4) very fine sand, very strongly, laminated with dark gray (5Y4/1) silt as above, unit appears almost oxidized, slight, effervescent at top to strongly effervescent, upper 25cm, with possible bioturbation indicated by pore filling and disturbed laminar, very abrupt boundary.	ML

MLC-46

Master core number: 506
 Location: SE, NE, NW, Sec. 14, T10N, R13W, Morgan Co., in the center of the lawn inside the loop of Dunmeyer's driveway.
 Landscape position: Bath Terrace
 Surface archaeology: none
 SCS mapped soil: Sparte loam, sand
 Elevation: 135.3m. (444ft.)
 Cored by: David S. Leigh, 10-14-83
 Described by: Edwin R. Haric, 8-3-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 149 OL (0- 59)	solum, loam, fine sand and fine sand, clear boundary.	SP
149- 182 C (59- 72)	dark, yellowish brown (10YR4/6) fine sand, single grains, loose, noneffervescent, very abrupt boundary.	SP
182- 203 MDL (72- 80)	dark, yellowish brown (10YR4/4) to light brownish gray (10YR6/2) loamy fine sand, with many medium yellowish brown (10YR5/6) Fe mottles, weak subangular blocks, noneffervescent, clear boundary.	SP
203- 240 MDL (80- 94)	yellowish brown (10YR5/6) to pale brown (10YR6/3) fine sand, variable colors, weakly stratified, noneffervescent, refusal.	SP

MLC-57

Master core number: 506
 Location: SE, SE, NW, Sec. 14, T10N, R13W, Scott Co., 20ft. west of Coon Run levee and 300ft. east of drainage ditch
 Landscape position: Big Island channel
 Surface archaeology: none
 SCS mapped soil: Hialeah silt loam
 Elevation: 132.9m. (436ft.)
 Cored by: David S. Leigh, 10-18-83
 Described by: Edwin R. Haric, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 48 C1 (0- 19)	spoils, abrupt boundary.	ML
48- 73 Bb (19- 29)	very dark grayish brown (10YR3/2) heavy, silt loam, weak medium subangular blocks, firm, strongly effervescent, common thin very dark brown (10YR2/2) clay coats on ped faces and in pores, clear boundary.	ML
73- 101 C1b (29- 40)	black (10YR2/1), peat, silt loam, with common fine very dark brown (10YR2/2) mottles, weak coarse subangular blocks, friable, violently effervescent, common gastropods, whole and fragmented, clear boundary.	OL
101- 139 11C2b (40- 55)	black (10YR2/1) fine peat, thin, bedded, slightly to strongly effervescent, variable, abrupt boundary.	UL
139- 206 UU (55- 81)	black (5Y2.5/1) to very dark gray (5Y3/1) at base silty clay, weak medium subangular blocks, violently effervescent, abundant gastropods and bivalve fragments, whole and fragmented, very abrupt boundary.	CL
206- 242 UU (81- 95)	greenish gray (5GY5/1) very fine sand, silt, massive, violently effervescent, few gastropods and bivalves, one small protoconia of above material, abrupt boundary.	UU
242- 278 UU (95- 105)	olive gray (5Y4/2) clay loam to fine sand, clay loam, thinly bedded, moderate internal mixing from bioturbation, violently effervescent, common gastropods and bivalves, very abrupt boundary.	CL
278- 300+UU (109- 116)	dark olive gray (5Y3/2) laminated fine sand and clay and silty, fine sand, violent, effervescent, refusal.	CL

MLC-38

Master core number: 510
 Location: SW, NM, Sec. 4, T15N, R14W, Scott Co., 125 mi. north of Coon Run
 levee and 65 ft. west, southwest of big cottonwood tree on edge of Bath
 Terrace
 Landscape position: Bath Terrace
 Surface archeologist none
 SCS mapped soil: Sparta loam sand
 Elevation: 135.3m. (444 ft.)
 Cored by: David S. Leish, 10-18-83
 Described by: Edwin R. Havig, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 22 C1 (0- 9)	dark brown (10YR3/3) fine sand, single grain, loose, noneffervescent, clear boundary.	SP
22- 40 A1 (9- 16)	very dark grayish brown (10YR3/2) fine sand, weak fine subangular blocky, noneffervescent, abrupt boundary.	SP
40- 105 B2 (16- 43)	dark brown (10YR3/3) fine sand, weak medium subangular blocky, loose, gradual boundary.	SP
105- 170+C (43- 67)	yellowish brown (10YR5/4) fine sand and loam, fine sand, stratified to single grain, loose, noneffervescent, refusal.	SP

MLC-39

Master core number: 511
 Location: SW, NM, Sec. 4, T15N, R13W, Scott Co., between RR tracks and sand,
 road .125 mi. north of Coon Run levee
 Landscape position: Bath Terrace
 Surface archeologist none
 SCS mapped soil: Sparta loam sand
 Elevation: 135.6m. (445 ft.)
 Cored by: David S. Leish, 10-18-83
 Described by: Edwin R. Havig, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 19 A1 (0- 7)	dark brown (10YR3/3) fine sand, single grain, loose, noneffervescent, gradual boundary.	SP
19- 49 B2 (7- 19)	dark yellowish brown (10YR4/4) fine sand, single grain, loose, noneffervescent, gradual boundary.	SP
49- 180+C (19- 72)	yellowish brown (10YR5/4) fine sand with var. small amount of silt, single grain, loose, noneffervescent, refusal.	SP

MLC-40

Master core number: 512
 Location: SE, SE, NW, Sec. 4, T15N, R13W, Scott Co., at the base of Bath Terrace
 scarp soft, due east of big cottonwood tree mentioned in MLC-38
 Landscape position: west edge of Blue Island channel
 Surface archeology: none
 SCS mapped soil: Ambrew clay loam
 Elevation: 133.8m. (439ft.)
 Cored by: David S. Leish, 10-18-83
 Described by: Edwin R. Haurig, 7-31-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 23 A11 (0- 9)	very dark grayish brown (10YR3/2) loam, fine sand, weak fine subangular blocky, friable, nonferrous, abrupt boundary.	SP
23- 31 A12 (9- 12)	very dark grayish brown (10YR3/2) loam, fine sand, single grain, loose, nonferrous, abrupt boundary.	SP
31- 100 C (12- 39)	grayish brown (10YR5/2) fine sand with some silt, single-grain, loose, nonferrous, very abrupt boundary.	SP
100- 122 IIB21bs (39- 48)	very dark grayish brown (2.5Y3/2) fine sandy loam, weak medium subangular blocky, firm, nonferrous, clear boundary.	SP
122- 166 IIB22bs (48- 65)	olive gray (5Y4/2) clay loam, weak coarse subangular blocky, firm, nonferrous, common thin black (5Y2.5/1) clay coats on ped faces, clear boundary.	CL
166- 180 IIB3b (65- 71)	dark grayish brown (2.5Y4/2) medium sorted sandy loam, weak coarse subangular blocky, friable, nonferrous, few very fine pebbles, clear boundary.	SP
180- 194+IIICb (71- 76)	light brownish gray (2.5Y6/2) fine sand, massive, nonferrous, refusal.	SP

MLC-41

Master core number: 512
 Location: NE, SE, NE, Sec. 22, T16N, R15W, Scott Co., 10th. west of GTE Post
 ML1215 and 17th. south of edge of Hwy. 104
 Landscape position: medial alluvial fan
 Surface archeological none
 SCS mapped soil: Northern silt loam
 Elevation: 136.2m. (447ft.)
 Cored by: David S. Leigh, 10-24-83
 Described by: Edwin P. Haisle, 7-30-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	
0- 17 A1 (0- 7)	black (10YR2/1) silt loam, moderate fine granular, friable, noneffervescent, heavy, bioturbated, clear boundary.	ML	245- 277 MDU (96-105) light olive brown (2.5Y5/4) and light yellowish brown (2.5Y6/4) silt, with many fine olive yellow (2.5Y6/6) mottles, weak subangular blocky, very slightly effervescent, few thin very dark brown (10YR2/2) clay coats in pores, abrupt boundary.
17- 43 A3 (7- 17)	very dark grayish brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, moderately bioturbated, clear boundary.	ML	277- 303 MDU (109-119) variegated dark grayish brown (2.5Y4/2) silt, clay loam with many fine and medium brown to dark brown (7.5YR4/4) and dark yellowish brown (10YR4/4) mottles, weak subangular blocky, very slight, effervescent, common thin to moderately thick very dark brown (10YR2/2) clay coats in pores, clear boundary.
43- 61 R1 (17- 24)	very dark grayish brown (10YR3/2) silt loam, weak medium breaking to fine subangular blocky, friable, noneffervescent, clear boundary.	CL	303- 364 MDU (119-143) grayish brown (2.5Y5/2) heavy silt loam, with many fine yellowish brown (10YR5/6) mottles, massive, slightly effervescent, clear boundary.
61- 116 R2t (24- 46)	dark yellowish brown (10YR4/4) silt loam, moderate medium and coarse subangular blocky, friable, noneffervescent, man, moderately thick, black (10YR2/1) clay coats on ped faces, gradual boundary.	CL	364- 373 UU (143-147) olive gray (5Y5/2) silt, clay, massive, very slightly effervescent, few reddish brown mottles as below in lower part, clear boundary.
116- 142 B3t (46- 56)	finely mottled dark yellowish brown (10YR4/4) and light yellowish brown (2.5Y6/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, few thin very dark brown (10YR2/2) clay coats on ped faces and in pores, gradual boundary.	CL	373- 402 UU (147-158) brown to dark brown (7.5YR4/4) silty clay, with few fine olive gray (5Y5/2) mottles, massive, slightly effervescent, top 5cm, fine sand, loam as last 5cm., few very fine pebbles at base, clear boundary.
142- 181 C1 (56- 71)	light yellowish brown (2.5Y6/4) silt, with many fine dark yellowish brown (10YR4/4) mottles, weak subangular blocky, with weak laminae toward base, friable, noneffervescent, few thin very dark brown (10YR2/2) clay coats in pores, abrupt boundary.	ML	402- 452 MDU (158-178) stratified grayish brown (2.5Y5/2) silt and very fine sandy silt, and yellowish brown (10YR5/4) and olive brown (2.5Y4/4) fine and medium sand, with common fine yellowish brown (10YR5/6) Fe mottles, some silt beds moderately laminated, strongly to slightly effervescent, variable, abrupt boundary.
181- 198 C2 (71- 78)	light olive brown (2.5Y5/4) silty clay loam and light yellowish brown (2.5Y6/4) silt, moderate, laminated, with few fine dark yellowish brown (10YR3/4) Fe mottles very slightly effervescent, common thin very dark brown (10YR2/2) clay coats in pores, abrupt boundary.	ML	452- 690 UU (178-272) yellowish brown (10YR5/4) medium sand with some silt, n. violently effervescent, one charcoal piece at 580cm., indeterminate boundary.
198- 245 11C3 (78- 96)	dark grayish brown (2.5Y4/2) silt, clay loam, with man, fine brown to dark brown (10YR4/3) mottles, weak subangular blocky, noneffervescent, common thin to moderately thick very dark brown (10YR2/2) clay coats in pores, abrupt boundary.	CL	690- 720+DU (272-283) light olive brown (2.5Y5/4) medium and coarse sand with few very fine pebbles, violently effervescent, refusal.

MLC-42

Master core number: 514

Location: SE 1/4 Sec. 34, T16N, R13W, Morgan Co., directly beneath power lines on the west side of Hwy. 100, across the road from a big white house that sits atop a high sand terrace remnant

Landscape position: medial alluvial fan

Surface archeology: none

Site mapped soil: Littleton silt loam

Elevation: 140.0m. (456ft.)

Cored by: David S. Leish, 10-24-83

Described by: Edwin R. Haeber, 8-6-84

Depth (m.) or Zone	Soil Horizon	Description	Unified Soil Classification	522-557 DL (200-219)	557-566 DL (219-223)	566-619 UU (223-244)	619-620+UU (244-244)
0- 118 DL (0-40)		solum, heavy silt loam to silt loam, clear boundary.	ML				
118- 139 C (46-55)		light olive brown (2.5Y5/4) silt loam, with many fine yellowish brown (10YR5/6) mottles, weak medium subangular blocky, friable, noneffervescent, few thin very dark gray (10YR3/1) clay coats in pores, clear boundary.	ML				
139- 202 Bolt (55-80)		olive brown (2.5Y4/4) silt loam, with common fine light olive brown (2.5Y5/6) and with common medium olive brown (2.5Y4/3) mottles, weak medium subangular blocky, friable, noneffervescent, many thin dark grayish brown (2.5Y4/2) clay coats in pores, abrupt boundary.	ML				
202- 222 41b1 (80-87)		very dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	ML				
222- 244 41b2 (87-118)		dark grayish brown (2.5Y4/2) to grayish brown (2.5Y5/2) at base silt loam, with many fine light olive brown (2.5Y5/4) mottles, weak coarse subangular blocky, friable, noneffervescent, few thin very dark grayish brown (2.5Y3/2) clay coats in pores, gradual boundary.	ML				
244- 436 C (MDL) (118-172)		grayish brown (2.5Y5/2) silt, weak to moderate fine and medium yellowish brown (10YR5/6) Fe mottles, massive to weakly laminated, strongly to slightly effervescent at base, gradual boundary.	ML				
436- 462 UU (172-182)		olive gray (5Y5/2) and olive gray (5Y4/2) clay, with few fine dark yellowish brown (10YR4/6) Fe mottles, moderately to strongly laminated slightly, effervescent, abrupt boundary.	CL				
462- 480 UU (182-189)		olive gray (5Y5/2) silt, strongly laminated and thin beds, slightly, effervescent, abrupt boundary.	ML				
480- 495 DL (189-195)		light olive brown (2.5Y5/4) medium sand, noneffervescent, abrupt boundary.	SP				
495- 542 UU (195-206)		olive gray (5Y5/2) clay and silt, clay, weakly laminated, slightly, effervescent, clear boundary.	CL				

very dark grayish brown (2.5Y3/2) to black (10YR2/1) at base clay to clay loam to loam, organic, possibly bioturbated by organisms, noneffervescent, very abrupt boundary.

dark grayish brown (10YR4/2) fine sand, noneffervescent, very abrupt boundary.

dark greenish gray (5GY4/1) coarse silt to silt, strongly laminated, slightly, to strongly effervescent, common organic laminae, very abrupt boundary.

dark gray (5Y4/1) fine sand, strongly effervescent, refusal.

MLC-43

Master core number: 515.
 Location: NW, NW, SE, Sec. 25, T15N, R13W, Norman Co., on north side of field road about .25 mile west of Hwy. 100.
 Landscape position: medial alluvial fan.
 Surface archeological zone.
 SCE mapped soil: Northern silt loam.
 Elevation: 130-34m. (427ft.).
 Cored by: David S. Leish, 10-24-83.
 Described by: Edwin R. Hailer, 8-1-84.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-120 OL (0-47)	solum, silt loam, abrupt boundary.	ML
120-141 Alb (47-50)	very dark grayish brown (10YR3/2) silt loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	ML
141-158 Eb (50-62)	olive brown (2.5Y4/4) silt loam, with man. fine dark brown (10YR3/3) mottles, weak medium subangular blocky, friable, noneffervescent, gradual boundary.	ML
158-372 Cb(MDU) (62-146)	light olive brown (2.5Y5/4) light silt loam, with man. fine light olive brown (2.5Y5/4) and dark yellowish brown (10YR4/4) mottles, weak subangular blocky, friable, slight, effervescent, gradual boundary.	ML
372-870 MDU (146-343)	light olive brown (2.5Y5/4) and grayish brown (2.5Y5/3) light silt loam and silt, man. fine dark yellowish brown (10YR3/4) and yellowish brown (10YR3/6) mottles, thin, bedded at top to moderate and strong laminae beginning about 420cm, slight, to strong, effervescent, first zone with grayish brown (2.5Y5/2) laminae at 591-598cm, this color laminae increasing with depth, few slightly heavier strata beginning about 690cm, very abrupt boundary.	ML
870-973 DU (343-383)	very strongly laminated grayish brown (2.5Y5/2) coarse silt and light yellowish brown (2.5Y6/4) silt, with few fine and medium dark yellowish brown (10YR3/6) Fe mottles, strong, effervescent, 10cm, thin, fine sand unit at base, common olive brown (2.5Y4/4) and olive (5Y4/4) clay laminae, very abrupt boundary.	ML
973-1015 UU (383-400)	dark greenish gray (5GY4/1) coarse silt and dark gray (5Y4/1) silt, stratified with few strong laminae, slightly to strong, effervescent, very few pieces of fine uncarbonized organic matter, very abrupt boundary.	ML
1015-1016+ML (400-400)	olive (5Y4/3) fine sand, loam, noneffervescent, refusal.	SP

MLC-44

Master core number: 516.
 Location: NE, NE, NW, Sec. 4, T15N, R13W, Scott
 Landscape position: Bath terrace.
 SCE mapped soil: Sparta loamy sand.
 Elevation: 135.3m (444ft.).
 Cored by: DSL, JEC.
 Described by: ERH.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-22 A1 (0-9)	very dark gray (10YR3/1) loam, fine sand, very weak coarse granular, very friable, noneffervescent, clear boundary.	SF
22-127 C1 (9-50)	very dark grayish brown (10YR3/2) loam, fine and medium sand, single grain, loose, noneffervescent, clear boundary.	SF
127-150+C2 (50-59)	dark yellowish brown (10YR3/4) loam, fine and medium sand, single grain, loose, noneffervescent, refusal.	SF

MLC-45

Master core number: 517
 Location: NE, NE, NW, Sec. 4, T15N, R13W Scott County,
 Landscape position: Bug Island Channel
 Soil mapped soil: Wet-land silt loam
 Elevation: 132.5m (436ft.)
 Cored to: DGLJEC
 Described to: ENH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 192 C (0- 76)	spoil, abrupt boundary	CL
192- 313 SOLUMB (76-123)	black (10YR2/1) to black (2.5Y2/0) peaty silt, clay loam to clay, clear boundary.	CL
313- 324 C1(UU) (123-126)	dark gray (5Y4/1) silt, clay loam, massive, strongly effervescent, few eastwood fragments, very abrupt boundary.	CL
324- 330+11C2(UU) (126-130)	olive gray (5Y5/2) medium and fine sand, slightly effervescent, refusal.	SP

MLC-46

Master core number: 518
 Location: NE, SE, NW, Sec. 4, T15N, R13W Scott County,
 Landscape position: Bug Island Channel
 Soil mapped soil: Wet-land silt loam
 Elevation: 132.9m (436ft.)
 Cored to: DGLJEC
 Described to: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 73 C (0- 29)	spoil, clear boundary.	ML
73- 215 SOLUMB (29- 85)	black (10YR2/1) to dark gray (5Y4/1) peaty silt, clay loam to clay loam, clear boundary.	CL
215- 360 C(UU) (85-142)	olive gray (5Y5/2) silt loam to silt, clay loam, massive to weak coarse subangular blocky friable, violently effervescent, many whole and fragmented eastwood shells, indeterminate boundary.	ML
360- 780+UU (142-307)	dark greenish gray (5Y4/1) pebbly coarse sand, violently effervescent, refusal.	SW

MLC-47

Master core numbers: 519
 Location: SE. 1/4, SW. 1/4, Sec. 26, T16N, R13W, Morgan Co., on H. Veck's property, 1/4 mi. from levee on field road at the edge of Bluffs Terrace scarp
 Landscape position: Bluffs Terrace
 Surface archeology: none
 SCS mapped soil: Hopedon sand, loam
 Elevation: 134.7m. (442ft.)
 Cored by: David E. Leigh, 10-25-83
 Described by: Edwin R. Halc, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 152 UL (0- 60)	solum, loam, clear boundary	ML
152- 230+C (60- 91)	dark yellowish brown (10YR3/4) fine sand, stratified, few light olive brown (2.5Y5/4) silt to loam thick laminae, noneffervescent, refusal.	SP

MLC-48

Master core number: 520
 Location: NW. 1/4, SW. 1/4, Sec. 26, T16N, R13W, Morgan County, landscape position: distal alluvial fan
 SCS mapped soil: Dupo silt loam
 Elevation: 135.3m (444ft.)
 Cored by: D.E. JEC
 Described by: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 191 C (0- 75)	spoil, clear boundary	ML
191- 320 SOLUMB (75-126)	dark grayish brown (2.5Y4/2) silt loam, with many fine olive brown (2.5Y4/4) and dark yellowish brown (10YR4/6) mottles, gradual boundary.	ML
320- 399 C (MDL) (126-157)	grayish brown (2.5Y5/2) silt loam to silt, with many fine olive brown (2.5Y4/4) and many fine, faint brown (7.5YR5/2) mottles, noneffervescent, weakly to finely laminated with few sand, loam and few ver., dark gray, (5Y3/1) laminae, gradual boundary.	ML
399- 680+D/100 (157-268)	grayish brown (2.5Y5/2) to very dark gray, (5Y3/1) medium sand, stratified with 2.5Y5/2 silt and silt loam laminae and thin beds; 5Y3/1 silt and fine sand, silt loam, organic from 590-600, 5Y3/1 fine and medium sand and silt, stratified from 640-680, strong, effervescent, refusal.	SP

MLC-43

Master core number: 511
 Location: NW 1/4, Sec. 26, T10N, R13W, Morgan County,
 Landscape position: medial alluvial fan
 SOC mapped soil: Dupre silt loam
 Elevation: 136.5m (448ft.)
 Cored to: DEL, DEC
 Described to: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 32 C (0- 13)	soil, clear boundary	ML
33- 162 SOLUMB1 (13- 64)	silt loam, abrupt boundary	ML
162- 273 SOLUMB2 (64-107)	silt loam, gradual boundary	ML
273- 361 C (MDL) (107-142)	grayish brown (2.5Y5/2) silt loam to silt, with main, fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) mottles, weak coarse subangular block, to weak, laminated, noneffervescent, abrupt boundary.	ML
361- 457 MUL (142-180)	olive gray (5Y5/2) and grayish brown (2.5Y5/2) silt, clay loam and silt, stratified with strong laminated zones, with zones of main, fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) mottles, noneffervescent, abrupt boundary.	ML
457- 525 UL (180-207)	very dark gray (5Y3/1) and dark gray (5Y4/1) silt and silt loam, stratified with strong, laminated zones, slightly effervescent, common to abundant disseminated fine pieces of organic matter, very abrupt boundary.	ML
525- 600 DU (207-260)	dark grayish brown (2.5Y4/2) loam, medium to coarse sand, pebbly at base, few loam, laminae at top, strong, effervescent, refusal.	SF

MLC-50

Master core number: 522
 Location: NW 1/4, NW 1/4, Sec. 35, T10N, R13W, Morgan County,
 Landscape position: Bay Island Channel
 SOC mapped soil: Ambrose clay loam
 Elevation: 133.5m (438ft.)
 Cored to: DEL, DEC
 Described to: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 163 SOLUM (0- 64)	silt, clay loam to loam, abrupt boundary	ML
163- 526 IIC(DL) (64-207)	dark grayish brown (2.5Y4/2) fine and medium sand with few loam, sand beds, noneffervescent, indeterminate boundary.	SF
526- 720+DU (207-283)	dark grayish brown (2.5Y4/2) medium and coarse sand with few pebbles, noneffervescent, refusal.	SF

MLC-51

Master core number: 523
 Location: NW, SW, NW, Sec. 35, T16N, R13W, Norman County,
 Landscape position: Pluffe terrace (edge)
 SOC mapped soil: Uric sand, loam
 Elevation: 134.1 (440ft.)
 Cored by: DSL, JEC
 Described by: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 145 SOLUH (0- 57)	silt loam to loam to sand, loam, clear boundary	ML
145- 208+11C(OL) (57- 82)	dark brown (10YR3/3) to dark yellowish brown (10YR3/4) fine and medium sand, noneffervescent, refusal.	SP

MLC-52

Master core number: 524
 Location: NE, SW, NW, Sec. 4, T15N, R13W, Scott County,
 Landscape position: Rath terrace (edge)
 SOC mapped soil: Sparta loam, sand
 Elevation: 135.7m (442ft.)
 Cored by: DSL, JEC
 Described by: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 45 SOLUM (0- 18)	very dark brown (10YR2/2) fine and medium sand, clear boundary.	SP
45- 155+C(OL) (18- 61)	very dark grayish brown (10YR3/2) fine and medium sand, refusal.	SP

MLC-54

Master core number: 526
 Location: NE, NE, NW, Sec. 15, T16N, R13W, Morgan Co., Srt. west of the southwest corner of the fenced in area of the water treatment plant
 Landscape position: Bath Terrace
 Surface archeological none
 SCS mapped soil: Plainfield sand
 Elevation: 136.9m. (449ft.)
 Cored by: David S. Leish, 10-26-83
 Described by: Edwin R. Hajic, 8-4-84

MLC-55

Master core number: 525
 Location: NW, SW, NW, Sec. 15, T16N, R13W, Morgan Co., Srt. west of the southwest corner of the fenced in area of the water treatment plant
 Landscape position: sand dune
 SCS mapped soil: Seale loam, sand
 Elevation: 134.7m (442ft.)
 Cored by: DCL, JEC
 Described by: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 89 SOLUM (0- 35)	dark yellowish brown (10YR3/4) fine sands, clear boundary.	SP	0- 180+DL (0- 71)	brown (10YR5/3) and dark yellowish brown (10YR4/4) fine sand, noneffervescent, common dark yellowish brown (10YR3/6) iron stained bands, refusal.	SF
89- 116 C (35- 46)	brown (10YR5/3) fine and medium sand, single grain, loose, noneffervescent, very abrupt boundary.	SP			
116- 240 SOLUM (46- 74)	loam, clear boundary.	ML			
240- 360 IIC (DL) (74-142)	grayish brown (2.5Y5/2) silt, clay, loam and silt, clay, with many fine dark yellowish brown (10YR4/6) mottles, weakly laminated, noneffervescent, gradual boundary.	CL			
360- 410 DL (142-161)	brown to dark brown (10YR4/3) loam to light olive brown (2.5Y5/4) fine sand, loam to fine sand, noneffervescent, clear boundary.	SF			
410- 480+DL (161-189)	dark grayish brown (2.5Y4/2) and grayish brown (2.5Y5/2) fine and medium sand and loam, sand, stratified, strong, effervescent, refusal.	SP			

MLC-5b

Master core number: 52b
 Location: NMNM/SE/Sec. 3, T15N, R13W, Scott Co., 400ft. north of field and
 about east of 40 acre section boundary.
 Landscape position: medial alluvial fan.
 Surface archeology: none.
 SCS mapped soil: Worthen silt loam
 Elevation: 137.1m. (450ft.)
 Cored by: David S. Leigh, 10-27-83
 Described by: Edwin R. Haise, 7-31-84

Depth in Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-191 OL (0-75)	solum, silt loam, abrupt boundary.	ML
191-224 Alb (75-88)	dark brown (10YR5/3) silt loam, with common fine yellowish brown (10YR5/4) mottles, weak fine subangular blocky, noneffervescent, clear boundary.	ML
224-260 Bb (88-102)	olive brown (2.5Y4/4) silt loam, with many fine dark yellowish brown (10YR4/4) mottles, weak medium subangular blocky, noneffervescent, gradual boundary.	ML
260-301 Cb(MDU) (102-119)	light olive brown (2.5Y5/4) silt, with many fine olive brown (2.5Y4/4) and few Mn mottles, mottles massive, very slightly effervescent, one zone of moderately laminated silt, very abrupt boundary.	ML
301-389 MUU (119-153)	grayish brown (2.5Y5/2) and light yellowish brown (2.5Y6/4) and light olive brown (2.5Y5/4) silt, common, fine, dark yellowish brown (10YR4/6) Fe mottles, strongly laminated strongly effervescent, very abrupt boundary.	ML
389-508 UU (153-200)	grayish brown (2.5Y5/2) to olive (5Y5/3) coarse silt, with few fine dark yellowish brown (10YR4/6) mottles, stratified strongly effervescent, one zone in the upper half with strong laminae and several organic laminae, units are massive, but have few fine pores, some with thin olive (5Y5/3) clay coats, very abrupt boundary.	ML
508-529 MUU (200-208)	olive (5Y5/3) silt, with many fine and coarse reddish brown mottles, very faint with no color equivalent mottles, massive slightly effervescent, with few thin fine sand laminae and one very fall, clear boundary.	ML
529-840+UU (208-331)	light olive brown (2.5Y5/4) medium and coarse sand at base, with thick olive gray (2.5Y5/2) silt laminae down to 720cm, first 45cm, only very slightly to slightly effervescent, silt laminae decreasing in frequency and thickness with depth, refusal.	SF

MLC-5b

Master core number: 5b
 Location: NMNM/SE/Sec. 4, T15N, R13W, Scott Co.
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soil: Worthen silt loam
 Elevation: 136.5m. (447ft.)
 Cored by: David S. Leigh, 10-27-83
 Described by: Edwin R. Haise, 7-31-84

Depth in Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-100 OL (0-39)	solum, silt loam, clear boundary.	ML
100-158 C (39-62)	brown to dark brown (10YR4/3) silt loam, weak subangular blocky, noneffervescent, few thin light gray (10YR7/2) silt coating, red faces, abrupt boundary.	ML
158-187 HB1b (62-74)	very dark brown (10YR2/2) silty clay loam, moderate medium subangular blocky, friable, noneffervescent, clear boundary.	CL
187-206 HB2b (74-81)	very dark brown (10YR2/2) heavy loam, weak medium subangular blocky, firm, noneffervescent, clear boundary.	ML
206-236 HB3b (81-94)	very dark grayish brown (10YR5/2) heavy loam, weak medium subangular blocky, firm, noneffervescent, clear boundary.	ML
236-307 HCb (94-156)	olive (5Y5/4) clay loam to fine sand, loam at base, with many fine olive gray (5Y4/2) and with few fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, to massive, noneffervescent, gradual boundary.	CL
307-420 UL (156-165)	olive gray (5Y5/2) fine sand, silt and silt, with common fine faint brown (7.5YR5/4) mottles, very weakly laminated noneffervescent, clear boundary.	ML
420-502 PL (165-198)	olive gray (5Y5/2) and brown (7.5YR5/4) fine sandy silt, and olive brown (2.5Y4/3) fine and medium sand, moderately to strongly laminated, with common fine dark yellowish brown (10YR4/6) Fe mottles, noneffervescent, few sand, vugs, very abrupt boundary.	ML
502-530+UL (198-209)	grayish brown (2.5Y5/2) medium sand, noneffervescent, refusal.	SF

MLC-57

Master core number: 509
 Location: NE 1/4 Sec. 4, T15N, R13W, Scott Co., 40ft. south of pecan tree and 250ft. west of field boundary.
 Landscape position: Bug Island channel
 Surface archeology: none
 SCS mapped soils: Dune silt loam
 Elevation: 132.9m. (436ft.)
 Cored by David S. Leish, 10-27-83
 Described by Edwin R. Haulic, 7-31-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 73 C (0- 29)	thinly bedded dark gray (10YR4/1) to light reddish brown (2.5YR6/4) silt loam, noneffervescent, spoil, very abrupt boundary.	ML
73- 98 IIRb (29- 39)	very dark grayish brown (2.5Y3/2) silty clay loam, moderate medium subangular blocky, firm, strongl. effervescent, two Fe coats lining red faces, abrupt boundary.	CL
98- 128 OU (39- 50)	thinly bedded very dark brown (10YR2/2) peaty heavy silt loam, and black (10YR2/1) peat, violently effervescent, common gastropods and bivalve fragments, abrupt boundary.	OL
128- 142 OU (50- 56)	black (10YR2/1) peat, slightly effervescent, very few gastropods and bivalve fragments, clear boundary.	OL
142- 152 OU (56- 60)	very dusky red (2.5YR2.5/2) peaty heavy silt loam, massive, violently effervescent, abundant gastropod and bivalve fragments, clear boundary.	OL
152- 171 UU (60- 67)	very dark gray (5Y3/1) heavy silt loam, massive, violently effervescent, abundant gastropod and bivalve fragments, whole, abrupt boundary.	ML
171- 270 UU (67-106)	olive gray (5Y4/2) medium and fine sand with rare very fine pebbles, mush, violently effervescent, abundant gastropod and bivalve fragments, whole, abrupt boundary.	SP
270- 348 UU (106-137)	thickly laminated and thinly bedded dark gray (5Y4/1) silt, and light brownish gray (2.5Y6/2) fine and very fine sand laminae, strongly effervescent, silt laminae get stronger in second half of unit, very abrupt boundary.	ML
348- 500 UU (137-197)	light olive brown (2.5Y5/4) to grayish brown (2.5Y5/2) medium and fine sand, violently effervescent, indeterminate boundary.	SP
500- 600+UU (197-236)	olive brown (2.5Y4/4) medium and coarse tail sorted sand with few very fine pebbles, some silt, violently effervescent, refusal.	SP

MLC-58

Master core number: 530
 Location: NW 1/4 Sec. 3, T15N, R13W, Scott Co., 20ft. into field at field entrance
 Landscape position: apex alluvial fan
 Surface archeology: none
 SCS mapped soil: Worthen silt loam
 Elevation: 146.3m. (480ft.)
 Cored by David S. Leish, 10-28-83
 Described by Edwin R. Haulic, 8-1-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 244 OL (0- 96)	solum, silt with cherty gravels, clear boundary	ML
244- 342 MDL (96-143)	light olive brown (2.5Y5/4) and light yellowish brown (2.5Y6/4) silt and very fine sandy silt, massive to weakly stratified at base, with common fine olive brown (2.5Y4/4) mottles, noneffervescent, abrupt boundary.	ML
342- 535 MDU (143-211)	grayish brown (2.5Y5/2) and light yellowish brown (2.5Y6/4), and light olive brown (2.5Y5/4) silt and very fine sand, with many fine dark yellowish brown (10YR4/4) and dark yellowish brown (10YR4/6) Fe mottles, massive, to weakly stratified at base, slightly to strongly effervescent, fine sand laminae in lower 40cm, increasing in abundance to last 20cm, which is all olive brown (2.5Y4/4) sand, very abrupt boundary.	ML
535- 800 DU (211-315)	grayish brown (2.5Y5/2) and light brownish gray (2.5Y6/2), and light yellowish brown (2.5Y6/4) silt and very fine sandy silt, moderately to strongly laminated, strongly effervescent, very abrupt boundary.	ML
800-1160 DU (315-457)	grayish brown (2.5Y5/3) and grayish brown (2.5Y5/2) heavy silt, strongly laminated with some massive units, strongly effervescent, very abrupt boundary.	ML
1160-1200 UU (457-472)	very dark grayish brown (2.5Y3/2) and grayish brown (2.5Y5/2) silt and very fine sand, very strongly laminated, violently effervescent, heavy, Fe staining especially at top of unit, very abrupt boundary.	ML
1200-1226 UU (472-483)	dark gray (N4/0) silt and very fine sand, very strongly laminated, strongly effervescent, common very dark gray (5Y3/1) organic silt laminae, abrupt boundary.	ML
1226-1230+UL (483-484)	gray (5Y5/1) fine sand, noneffervescent, refusal	SF

MLC-5*

Master core number: 5-1

Location: NE, NE, SE, Sec. 4, T15N, R13W, Scott Co., midwa. between MLC-55 and MLC-56

Landscape position: medial alluvial fan

Surface archeology: none

SCS mapped soil: Littleton silt loam

Elevation: 136.2m. (447ft.)

Cored by: David S. Leish, 10-28-83

Described by: Edwin R. Hajic, 7-31-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 120 OL (0- 47)	solum 1, silt loam, abrupt boundary	ML
120- 241 OL (47-103)	solum 2, heavy silt loam, clear boundary	ML
241- 289 C (MDU) (103-114)	finely mottled olive brown (2.5Y4/4) and light olive ML brown (2.5Y5/6) silt loam, massive, friable, slightly effervescent, abrupt boundary.	ML
289- 300 MDL (114-118)	dark grayish brown (2.5Y4/3) heavy silt loam, with common fine olive brown (2.5Y4/4) mottles, noneffervescent, abrupt boundary.	ML
300- 310 MDU (118-122)	light yellowish brown (2.5Y6/4) silt, with common fine light olive brown (2.5Y5/4) mottles, massive to very weakly laminated slightly effervescent, abrupt boundary.	ML
310- 359 MDL (122-130)	dark grayish brown (2.5Y4/3) heavy silt loam, with med. fine yellowish brown (10YR5/6) mottles, weak subangular blocky, noneffervescent, abrupt boundary.	ML
359- 356 OL (130-140)	olive gra. (5Y5/2) clay loam, with few medium dark yellowish brown (10YR4/6) mottles, weak subangular blocky, noneffervescent, very abrupt boundary.	CL
356- 536 UU (140-209)	weakly laminated to strongly laminated olive gra. (5Y5/2), grayish brown (2.5Y5/2) and dark brown (7.5YR5/4) coarse silt, silt, loam, clay loam, slightly to strongly effervescent, few large dark yellowish brown (10YR4/6) Fe mottles, few krotovina, abrupt boundary.	ML
530- 570+D/UU (209-224)	stratified light olive brown (2.5Y5/4) medium and fine sand and olive gra. (5Y5/2) moderately laminated silt, strongly effervescent, refusal.	SP

MLC-60

Master core number: 5-2

Location: NE, NW, SE, Sec. 4, T15N, R13W, Scott Co., 40ft. west of sand terrace remnant

Landscape position: Bus Island channel

Surface archeology: none

SCS mapped soil: Lauder fine sandy loam

Elevation: 132.4m. (434ft.)

Cored by: David S. Leish, 10-31-83

Described by: Edwin R. Hajic, 7-31-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 21 C (0- 8)	very dark grayish brown (10YR3/2) heavy silt loam, weak fine angular blocky, noneffervescent, very abrupt boundary.	ML
21- 163 OL (8- 64)	black (10YR2/1) and very dark gra. (10YR3/1), and very dark grayish brown (2.5Y3/2) fine sand, loam, fine sand, fine and medium sand, weak subangular blocky, to single grain, loose, noneffervescent, darker units are organic, very abrupt boundary.	SP
163- 308 MDL (64-121)	thinly bedded and laminated fine sand, clay loam, loam, fine sand, silt, grayish brown (2.5Y5/2), very dark grayish brown (2.5Y3/2), black (2.5Y2/1) yellowish brown, noneffervescent to very slightly effervescent at base, top 30cm. has few organic sand laminae, overall unit fine upward, common medium dark yellowish brown (10YR4/6) and (10YR5/6) Fe mottles, very abrupt boundary.	ML
308- 350 DU (121-138)	olive brown (2.5Y4/4) medium sand, with few grayish brown (2.5Y5/2) silt laminations, strongly to violently effervescent, refusal boundary.	SP

MLC-61

Master core number: 533
 Location: NE 1/4 SW 1/4 Sec. 18, T16N, R12W, Morgan Co., 3 ft. north of plowed field in grass, field entrance on the south side of Arenzville road
 Landscape position: medial alluvial fan
 Surface archeology: none
 SCS mapped soil: Coffey silt loam
 Elevation: 135.5m. (444ft.)
 Cored by: David S. Leish and Julia E. Clifton, 11-21-83
 Described by: Edwin R. Hujic, 8-2-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 86 C1 (0- 34)	ver. dark gray (10YR3/1) and black (10YR2/1) silt loam, stratified with units of bioturbated laminations or moderated granular structure, friable, strong, to noneffervescent, contains at least one A horizon from 52-86cm., abrupt boundary.	ML
86- 127 B11b (34- 50)	grayish brown (10YR5/2) silt loam, weak medium subangular blocky, friable, noneffervescent, clear boundary.	ML
127- 141 B12b (50- 56)	dark grayish brown (10YR4/2) heavy silt loam, moderate medium subangular blocky, firm, noneffervescent, many thin grayish brown (10YR5/2) silt coats on ped faces, gradual boundary.	ML
141- 230 11B2bs (56- 91)	very dark gray (10YR3/1) silty clay loam, moderate medium and coarse columnar, firm, noneffervescent, gradual boundary.	CL
230- 310 11B3bs (91-122)	dark grayish brown (2.5Y4/2) loam and silty clay loam, to heavy silt loam at base, with many fine olive brown (2.5Y4/4) mottles, moderate medium subangular blocky, noneffervescent, common thin very dark grayish brown (2.5Y3/2) clay coats on ped faces and in pores, clear boundary.	ML
310- 339 111Cbs (122-133)	grayish brown (2.5Y5/2) loam, with many fine and medium dark yellowish brown (10YR4/6) Fe mottles, massive, noneffervescent, one krotovina at top of unit with dark grayish brown (10YR4/2) silty clay loam fill, abrupt boundary.	ML
339- 410 DL (133-161)	light olive brown (2.5Y5/4) fine sand, noneffervescent, indeterminate boundary.	SP

MLC-62

Master core number: 534
 Location: NW 1/4 SE 1/4 Sec. 18, T16N, R12W, Morgan Co., on field entrance 25ft. south of Arenzville Rd.
 Landscape position: medial alluvial fan
 Surface archeology: none
 SCS mapped soil: Dufo silt loam
 Elevation: 135.0m. (445ft.)
 Cored by: David S. Leish and Julia E. Clifton, 11-22-83
 Described by: Edwin R. Hujic, 8-2-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 196 C (0- 77)	brown to dark brown (10YR4/3) and dark yellowish brown (10YR4/4), and very dark grayish brown (10YR3/2) and dark brown (10YR3/3) and very dark brown (10YR2/2) silt loam and silt, stratified with rapidly alternating units being massive and moderately to strongly laminated, bioturbated, or weak subangular blocky, friable, strongly effervescent, very abrupt boundary.	ML
196- 208 11A1B (77- 82)	very dark gray (10YR3/1) light silty clay loam, moderate fine subangular blocky, friable, noneffervescent, gradual boundary.	CL
208- 230 11B1bs (82- 91)	very dark gray (10YR3/1) silty clay loam, moderate medium prismatic, firm, noneffervescent, gradual boundary.	CL
230- 293 11B2bst (91-115)	dark gray (10YR4/1) silty clay loam, moderate coarse prismatic, firm, noneffervescent, many very dark gray (10YR3/1) clay coats on ped faces, one large krotovina of dark grayish brown (10YR4/2) loam, gradual boundary.	CL
293- 322 11B3bs (115-127)	very dark grayish brown (2.5Y3/2) loam, with common fine olive brown (2.5Y4/4) mottles, weak coarse subangular blocky, friable, noneffervescent, clear boundary.	ML
322- 392 111Cbs(D/U) (127-154)	very dark grayish brown (2.5Y3/2) and dark grayish brown (2.5Y4/2), with few fine yellowish brown (10YR5/6) mottles, massive, noneffervescent, clear boundary.	MS
392- 410 DL (154-161)	dark grayish brown (2.5Y4/2) to grayish brown (2.5Y5/2) fine and medium sand, stratified, noneffervescent, clear boundary.	SP
410- 600+DU (161-236)	grayish brown (10YR5/2) fine sand, ver. slightly effervescent, refusal.	SP

Master core number: 535

Location: NW 1/4 SE, Sec. 16, T18N, R12W, Moran Co., 30 ft. east, southeast of the first telephone pole east of the field boundary, on Kings property.

Landscape position: medial alluvial fan

Surface archeology: none

SCS mapped soil: Northern silt loam

Elevation: 140.2m (460ft.)

Cored by: David S. Leish and Julia E. Clifton, 11-22-83

Described by: Edwin R. Hajic, 8-5-84

608- 660+DU
(239-260)

grayish brown (2.5Y5/2) and grayish brown (2.5Y5/2) grayish brown (2.5Y5/3), silt, stratified, one zone near top of very dark grayish brown (2.5Y3/2) silt with few fine uncarbonized organic matter pieces, strongly effervescent, refusal.

ML

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 47 A1 (0- 19)	black (10YR2/1) silt loam, moderate fine subangular blocky, friable, noneffervescent, gradual boundary.	ML
47- 99 B (19- 39)	very dark grayish brown (10YR3/2) silt loam, moderate fine subangular blocky, friable, noneffervescent, heavily bioturbated, clear boundary.	ML
99- 132 C (39- 52)	very dark grayish brown (2.5Y3/2) silt loam, weak medium and coarse subangular blocky, friable, noneffervescent, clear boundary.	ML
132- 162 Ab1 (52- 64)	very dark brown (10YR2/2) silt loam, weak medium breaking to fine subangular blocky, friable, noneffervescent, gradual boundary.	ML
162- 180 Bb1 (64- 71)	dark brown (10YR3/3) silt loam, moderate medium subangular blocky, friable, noneffervescent, clear boundary.	ML
180- 240 Ab2 (71- 94)	black (10YR2/1) heavy silt loam, weak fine subangular blocky, friable, strongly effervescent, clear to abrupt boundary.	ML
240- 301 C(MDU) (94-119)	light olive brown (2.5Y5/4) and grayish brown (2.5Y5/2) silt, with many fine yellowish brown (10YR5/6) and dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocky, strongly effervescent, few light yellowish brown (2.5Y6/4) fine sand near base, abrupt boundary.	ML
301- 392 MDU (119-154)	grayish brown (2.5Y5/2) silt, with many fine light olive brown (2.5Y5/6) and dark yellowish brown (10YR4/6) Fe mottles, strongly effervescent, stratified, weakly to moderately laminated, abrupt boundary.	ML
392- 432 UU (154-170)	olive gray (5Y5/2) coarse silt to sand, coarse silt, massive, very slightly effervescent, clear boundary.	ML
432- 608 RU (170-239)	light olive brown (2.5Y5/4) fine sand, slightly effervescent, indeterminate boundary.	SF

APPENDIX B

Particle Size and Carbonate Data

Table B-1. Particle Size and Carbonate Data.

CORE	DEPTH (cm)	PARTICLE SIZE (%)			CARBONATE MINERALS (%)		
		Sand 2mm-63um	Silt 63um-2um	Clay 2um	Cal- cite	Dolo- mite	Total Car- bonates
DLC-28	0- 22	65.86	13.88	20.26			
	22- 34	91.85	4.82	3.33			
	34- 46	92.15	5.35	2.50			
	46- 63	94.62	3.57	1.81			
	63- 80	94.09	4.39	1.52			
	80- 98	93.23	5.35	1.42			
	98-110	88.91	8.59	2.50	0	0	0
	110-123	71.72	20.69	7.59	0	0	0
	123-139	50.75	36.75	14.00	0	0	0
	139-155	47.88	27.69	20.19	0	0	0
	155-168	32.73	8.25	24.48	0	0	0
	168-183	27.73	44.32	27.95	0	0	0
	183-199	31.60	42.16	26.24	0	0	0
	199-202	59.80	24.18	16.62	0	0	0
	202-211	82.34	13.06	4.60	0	0	0
	211-224	53.51	29.31	17.18	0	0	0
	224-240	76.34	15.48	8.18	0	0	0
	240-260	85.31	9.16	5.53	0	0	0
	260-280	82.40	7.66	9.94	0	0	0
	280-300	51.12	35.03	13.85	0	0	0
	300-320	33.85	48.76	17.39	0	0	0
	320-340	34.38	47.27	18.45	0	0	0
	340-360	38.55	45.40	16.05	0	0	0
	360-380	37.60	47.67	14.73	0	0	0
	380-400	4.37	64.05	31.58	0	0	0
	400-418	57.73	29.44	12.83	0	0	0
	418-440	86.47	9.27	4.26	0	0	0
	440-480	92.96	5.08	1.96	0	0	0
	480-520	94.68	3.95	1.37	0	0.64	0.64
	520-570	91.25	6.94	1.81	0	2.65	2.65
	570-620	92.74	1.58	5.68	0.04	2.25	2.29
	620-670	64.80	28.15	7.05	0.75	8.83	9.58
	670-720	89.94	7.51	2.55	1.24	6.20	7.44
MLC-19	0- 17	0.97	85.95	13.08			
	17- 32	0.98	83.00	16.02			
	32- 43	0.43	80.64	18.93			
	43- 57	0.41	79.83	19.77			
	57- 76	0.38	80.54	19.08			
	76- 94	0.24	78.07	21.69			
	94-107	0.14	75.49	24.37			
	107-120	0.21	73.71	26.08			

Table B-1. (continued)

CORE	DEPTH (cm)	PARTICLE SIZE (%)			CARBONATE MINERALS (%)		
		Sand 2mm-63um	Silt 63um-2um	Clay 2um	Cal- cite	Dolo- mite	Total Car- bonates
	120-132	0.14	76.41	23.45			
	132-152	0.16	75.03	24.81			
	152-169	0.23	71.14	28.63	0	0	0
	169-186	0.26	76.62	23.12	0	0	0
	186-210	0.45	85.06	14.49	0	5.01	5.01
	210-235	0.59	88.69	10.72	0	10.37	10.37
	235-258	0.45	91.17	8.38	0	9.94	9.94
	258-269	0.53	79.98	19.49	0	7.95	7.95
	269-280	0.60	82.17	17.23	0	8.43	8.43
	280-288	0.42	90.23	9.35	0	11.71	11.71
	288-294	1.04	90.98	7.98	0	10.39	10.39
	294-309	0.52	83.49	15.99	0	11.23	11.23
	309-325	0.50	84.64	14.86	0	12.07	12.07
	325-340	0.66	85.00	14.34	0	10.43	10.43
	340-360	1.57	66.91	31.52	0	0.64	0.64
	360-380				0	0.41	0.41
	380-400				0	0.75	0.75
	400-420	2.01	67.72	30.78	0	0.75	0.75
	420-442	2.81	71.98	25.21	0	5.47	5.47
	442-458	2.41	77.82	19.77	0	9.53	9.53
	458-478	1.86	87.33	10.81	0	16.19	16.19
	478-498	4.89	84.88	10.23	0	17.26	17.26
	498-520	4.92	82.99	12.09	0	16.09	16.09
	520-548	0.77	85.82	13.41	0	15.60	15.60
	548-563	4.57	90.78	4.65	0	6.82	6.82
	563-570	67.64	22.51	9.85	0	7.95	7.95
	570-575	74.77	20.58	4.65	0	6.89	6.89

APPENDIX C

**Outline of Late Wisconsinan and Holocene
Geology of the Lower Illinois River Valley**

by

Edwin R. Hajic

The purpose of this appendix is twofold: first, to briefly summarize the geomorphology, stratigraphy and depositional environments, and outline a chronology of late Wisconsinan and Holocene events in the lower Illinois River Valley; and second, to report 21 radiocarbon dates from levee and drainage districts, 11 of which are previously unreported (Table C-1). Most descriptive information contained in previous levee and drainage district reports (Hajic and Hassen, 1980; Hajic, 1981b;c; 1983b; Hajic and Leigh, this volume) is not repeated here and is deferred to a more comprehensive summary report now in preparation. Similarly, not all evidence or supporting arguments are developed here.

The geologic history outlined represents a collection of working hypotheses. It is certain there will be some refinement or revision of these ideas as further analyses of the hundreds of collected cores takes place.

Prior to summarizing geologic events, several salient points regarding the general geomorphology of the lower 120 km of the Illinois Valley which constitutes the project area need to be presented. A variety of late Wisconsinan and very early Holocene terraces of diverse origin and morphology are recognized in the lower valley (Figures C-1 and C-2). Two general down-valley trends are evident in all but the Deer Plain Terrace. Percent valley area occupied by terraces decreases and sequentially lower terraces progressively drop out (Figures C-1, C-2 and C-3). The only exception is the Deer Plain Terrace for which the opposite is true (Rubey, 1952). In the Illinois Valley, the Deer Plain is characterized by a reverse slope relative to the present Illinois River. It is broad and featureless except for some dunes at the extreme southern end. The Bath Terrace (Wanless, 1957; Styles, 1984) is mantled almost entirely by dunes and has a relatively low slope. In contrast, the Bluffs Terrace (Styles, 1984; Hajic, 1983b; this report) is relatively steep and grades up-valley to the Bath (Figure C-3). The Bluffs is a slightly undulating surface dissected by a broad shallow paleochannel, the Bug Island Paleochannel. The Bluffs Terrace and paleochannel abruptly end at a chain of Bath Terrace remnants cutting diagonally across the valley. The Keach School Terrace (Butzer, 1977) is

Table C-1. Lower Illinois River Valley Levee and Drainage District Radiocarbon Dates.

Age (RCYBP) ¹	Lab #	Location	Provenience	Context	Material Dated ⁴
14,590±240	ISGS-1255	SE SE SW Sec24 T16N R13W	MLC-98,C,D	From Unit 3 ² slackwater silt in Bug Island Paleochannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: wood (mostly coniferous, a little diffuse; porous); bark; herbaceous plant material; spruce needles.
14,300±290	ISGS-1263	SE SE SW Sec24 T17N R13W	DLC-12A-F	From base of Unit 3 ² in Bug Island Paleochannel beneath Unit 4 ⁴ eolian sand.	Uncarbonized plant debris: coniferous wood and bark; abundant spruce needles; few fir needles; herbaceous plant material.
13,390±190	ISGS-894	NW SW SW Sec4 T8N R13W	MLC-42A,B	From lacustrine silt immediately below interlaminated black & reddish brown clay, below olive lacustrine clay, the Deer Plain Terrace surface, and alluvial fan.	Primarily uncarbonized spruce, cedar wood and bark; some spruce, white cedar and fir needles.
13,360±240	ISGS-1264	SE NE NW Sec13 T15N R13W	MLC-34	From upper Unit ² (lower Unit 3 ² ?) laminated silt interstratified with fine sand in Bug Island Paleochannel beneath Unit 6 ² upland derived silt.	Uncarbonized plant debris: herbaceous plant material; abundant spruce needles; few fir needles; some coniferous wood and bark.
13,340±180	ISGS-1284	SW SE SE Sec26 T16N R13W	MLC-24	From Unit 3 ² slackwater silt in Bug Island Paleochannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: herbaceous plant material; seeds (primarily Cyperaceae and Potamogeton); conifer wood; spruce needles.
13,010±140	ISGS-900	SE SW NW Sec21 T11N R13W	HLC-38C,D	From lacustrine silt interlaminated with reddish brown clay below olive clay, the Deer Plain Terrace and the Buck Lake member ³ of the Cahokia Alluvium.	Primarily uncarbonized coniferous wood, bark; little charcoal; some spruce and fir needles.
12,360±240	ISGS-1283	SE SE SW Sec24 T16N R13W	MLC-9A,B,C (6.90)	From Unit 3 ² slackwater silt in Bug Island Paleochannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: coniferous wood and bark; seeds (primarily Polygonum and Cyperaceae); herbaceous plant parts; few spruce needles.
12,000±100	ISGS-911	SE NE SW Sec5 T8N R13W	MLC-35A-V	From laminated silty clay and sand beneath Keach School Terrace and inset into Deer Plain Terrace.	Primarily uncarbonized coniferous wood (with and without resin ducts); spruce needles; some bark, seeds and other non-woody fragments.
11,070±190	ISGS-1277	SW NW NW Sec24 T14N R13W	VASCON-2	From fine sandy loam immediately below below depositional lense of twigs, peat, decomposed organics on Bath Terrace remnant(?) below eolian sand.	Uncarbonized wood (Fraxinus?).
10,900±80	ISGS-1120	SW NW NW Sec24 T14N R13W	VASCON-1A,B,D	From depositional lense of twigs, peat, and decomposed organics on Bath Terrace remnant(?) below eolian sand.	Uncarbonized wood (few pieces of diffuse porous).
9,830±160	ISGS-1281	NE SE NW Sec14 T16N R13W	MLC-29	From Unit 2 ² fine & medium sand w/silt and clay laminae in Bug Island Paleochannel.	Uncarbonized wood and bark (no conifer wood or needles present).

Table C-1. (continued)

Age (RCYBP) ¹	Lab #	Location	Provenience	Context	Material Dated ⁴
9,750±70	ISGS-1264	SE SE SE Sec2 T14N R14W	MVT-1B	From near base of stratified and laminated silt unit filling old meander belt of Mauvaise Terra Creek which incises Keach School Terrace and enters anastomosing paleochannel system.	Primarily uncarbonized nonconiferous (diffuse and ring porous) wood and bark; some uncarbonized plant debris.
9,480±130	ISGS-1135	SW SW SW Sec30 T 8N R13W	NLC-BR11U-56	From top of olive gray clay at depth below sand to sandy silt, then silty clay with organics and shell fragments.	Uncarbonized ash wood (<i>Fraxinus</i> sp.).
9,300±150	ISGS-1122	NW NE NE Sec4 T12N R13W	LLC-40	From silty clay to clayey silt unit below Buck Lake member ³ of the Cahokia Alluvium.	Uncarbonized diffuse porous wood; bark; partially decomposed plant debris.
6,320±90	ISGS-1278	NW SE SW Sec1 T11N R14W	QSR-TI(F4)	From the Quasar (Archaic) site within silty clay loam Illinois River natural levee deposits. At depth is reddish brown clay.	Dispersed charcoal: ca. 95% nutshell (almost all thick shelled <i>Carvæ</i>) and wood (some <i>Juglans</i>).
5,700±140	ISGS-930	NE NE NE Sec32 T12N R13W	HLC-11A	From base of paleochannel-filling Hartwell member ³ of the Cahokia Alluvium, below natural levee of mochan slough consisting of Buck Lake member ³ silty clay loam.	Primarily nonconiferous wood; non-woody plant fragments; some stems, bark, seeds; little charcoal.
5,000±70	ISGS-1095	NW SE SE Sec29 T13N R13W	LLC-55	From base of paleochannel-filling Hartwell member ³ of the Cahokia Alluvium, below Buck Lake member ³ . Early Woodland cultural materials at the ground surface.	Uncarbonized section of birch branch (<i>Betula</i> sp.) about 30 years in age.
3,650±70	ISGS-903	SE SE SW Sec32 T12N R13W	HLC-42A,B	From upper third of paleochannel-filling Hartwell member ³ of the Cahokia Alluvium below the McFain ³ and Buck Lake members.	Primarily uncarbonized and carbonized bark and nonconiferous wood; some seeds and black walnut shell.
2,420±70	ISGS-1120	NE NE NW Sec15 T12N R13W	LLC-11B	From midsection of silty clay to sand unit infilling floodbasin slough or yazoo stream system and belonging to the Buck Lake member ³ of the Cahokia Alluvium.	Uncarbonized diffuse porous wood and fine partially decomposed organic matter.
1,980±80	ISGS-1084	NE NE NW Sec15 T12N R13W	LLC-11A	From top of silty clay to sand unit infilling floodbasin slough or yazoo stream system and belonging to the Buck Lake member ³ of the Cahokia Alluvium.	Primarily uncarbonized bark and nonwoody plant debris; some wood (<i>Platanus</i> , <i>Ulmus</i> , <i>Carvæ</i> , unidentifiable diffuse porous).
1,780±70	ISGS-1286	NW NW SE Sec4 T15N R13W	NLC-57	From near-surface Unit 8 ² in Bug Island Paleochannel.	Bulk sample of peaty heavy silt loam.

¹Ages are calculated on the basis of a C-14 half-life of 5,569 years.²Unit numbers from this volume.³Informal members from Hajic, 1983b.⁴Identifications by Nancy Asch, Archeobotanical Laboratory, Center for American Archeology.

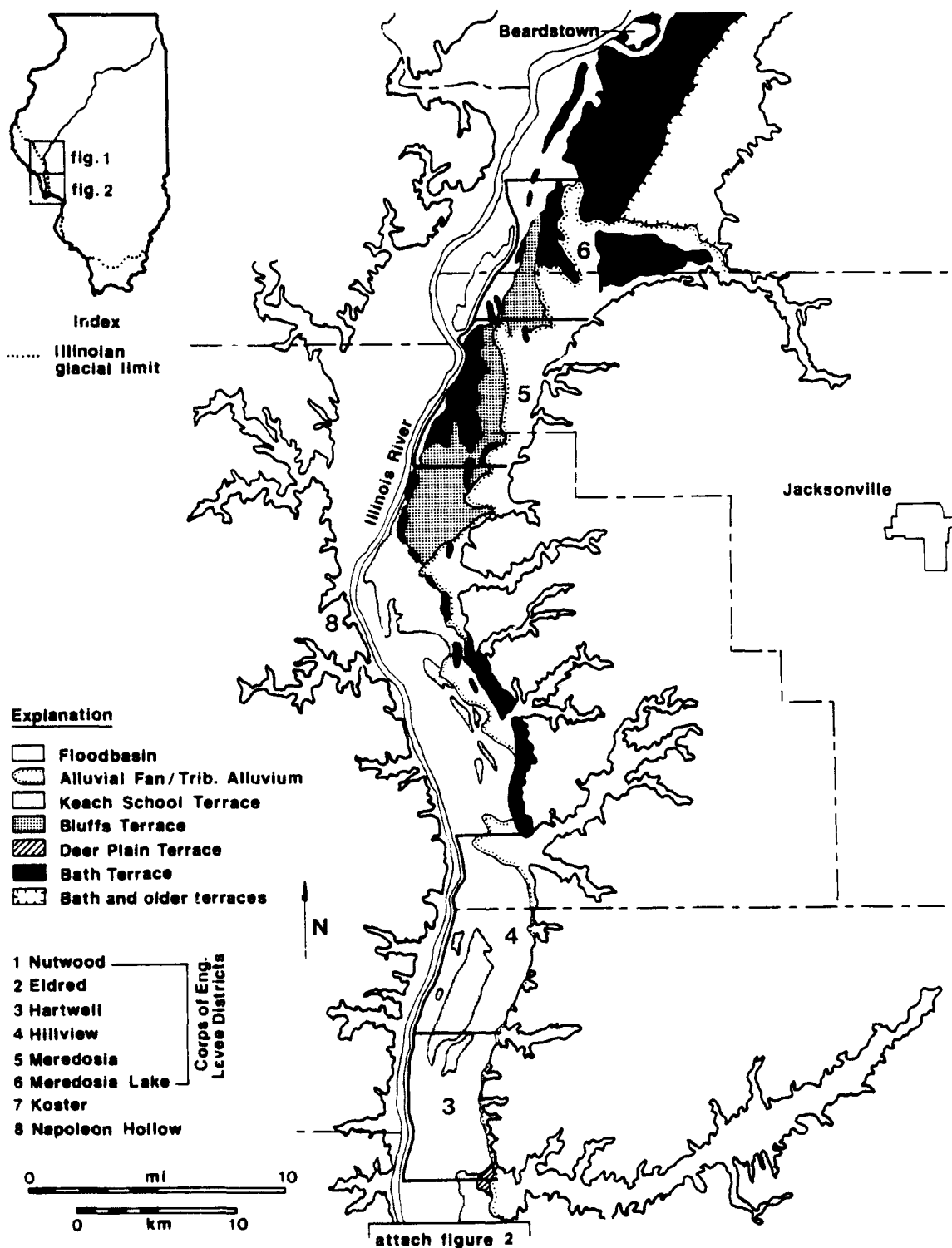


Figure C-1 General geomorphology of the lower Illinois River valley, north section, east of the Illinois River

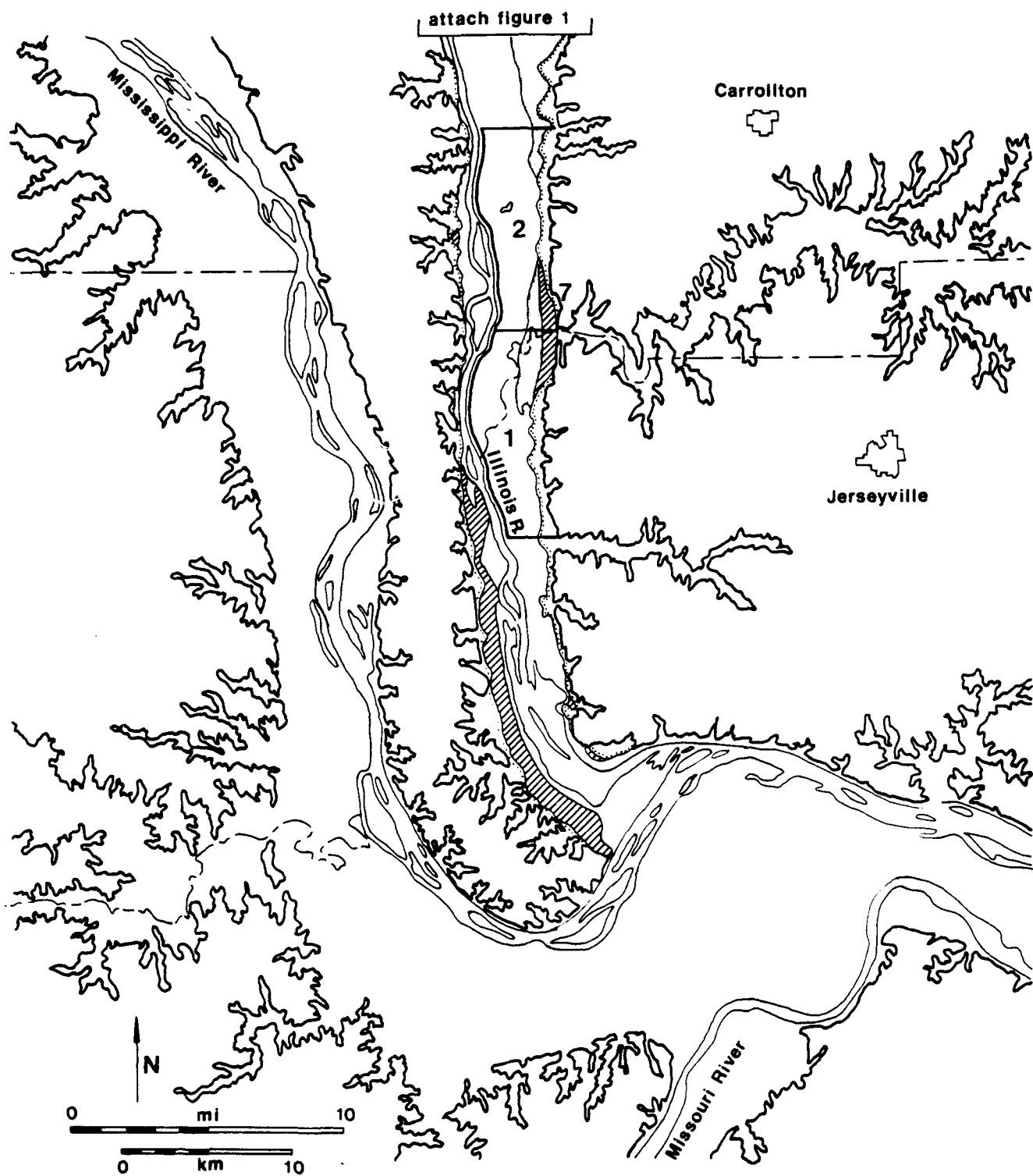


Figure C-2 General geomorphology of the lower Illinois River valley, south section

ILLINOIS RIVER VALLEY --- LONGITUDINAL PROFILE

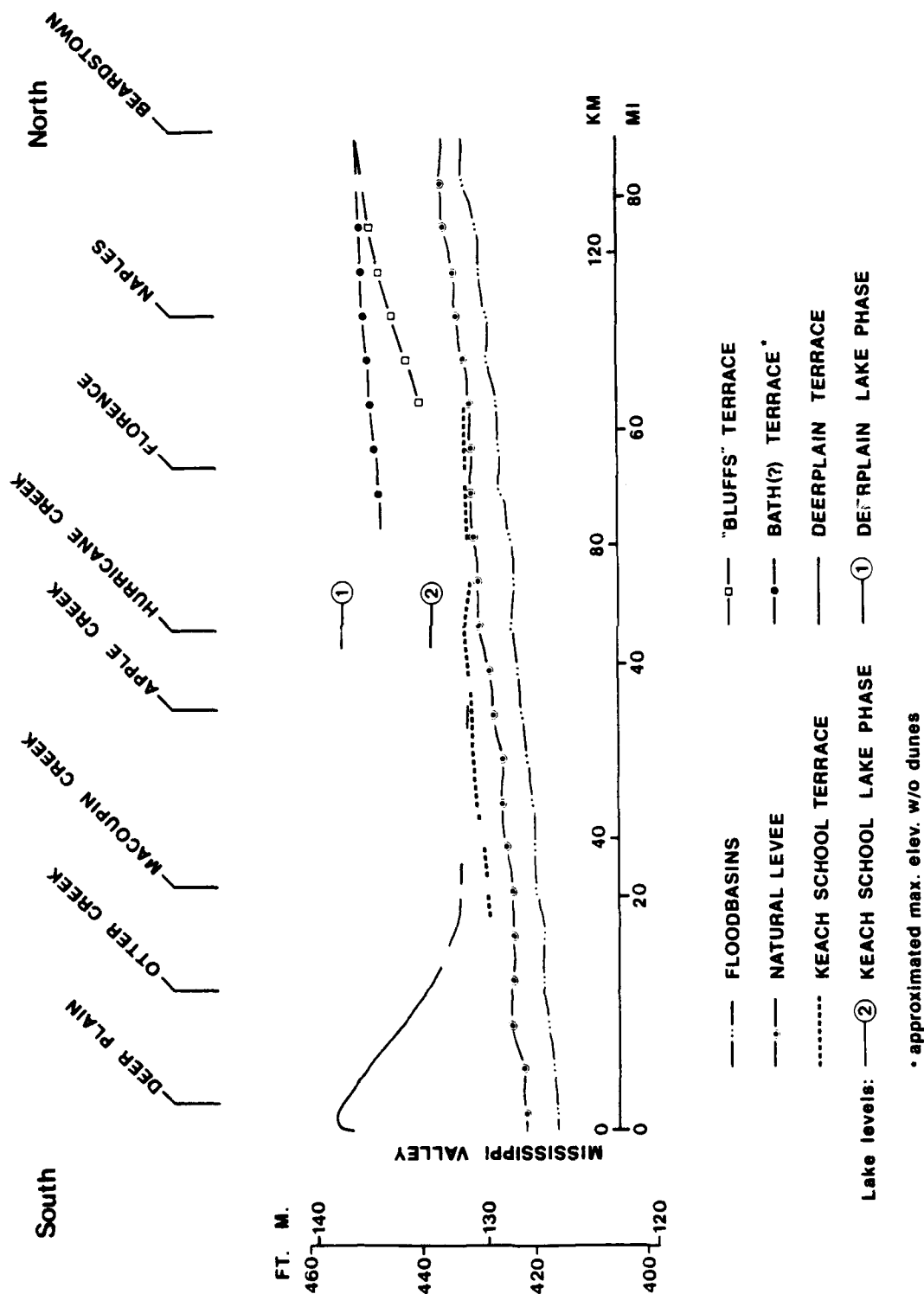


Figure C-3 Longitudinal profile of major geomorphic surfaces, lower Illinois River valley

almost featureless and exhibits a nearly level surface. It occurs south of the chain of Bath remnants. Typical Beardstown Terrace (Wanless, 1957) morphology consists of point bars with evidence for scroll bars. In mapping the Beardstown Terrace, which is identified only in a restricted reach of the valley above and below Beardstown, Wanless undoubtedly included some isolated Bath Terrace remnants.

Several distinct paleochannel systems are also evident. The Bug Island Paleochannel (Hajic and Leigh, this volume; Styles, 1984) is a broad, shallow and straight channel cutting the Bath and Bluffs terraces. Although largely buried by upland derived deposits, it can be traced from east of Beardstown south to the diagonal chain of Bath Terrace remnants where it ends or is abruptly truncated. The Bug Island Paleochannel is closely associated with the Bluffs terrace and several channel bar/islands are considered to be Bluffs remnants. A broad, shallow anastomosing system, consisting of one to three branches, cuts the Keach School Terrace and is younger than the Bug Island Paleochannel. This paleochannel system has common mid-channel bars. Remnants can be traced at least as far south as Macoupin Creek.

This "multiple channel" system is precursor to an entrenched system consisting of one to two branches oriented along channel branches of the anastomosing system, favoring straight reaches, and favoring a course along the western valley margin. The considerably narrower modern Illinois River course consists of straight reaches, probably inherited from this entrenched system, connected by broad bends. It follows the western valley margin from Valley City to the mouth.

Nearly all preserved paleochannel reaches have been partially re-worked by yazoo and deferred tributary stream systems.

In sharp contrast to all other Illinois River paleochannel systems are a series of meanders restricted to the middle Illinois Valley and best expressed several kilometers northeast of Beardstown. Associated point and scroll bars were mapped as typical Beardstown Terrace by Wanless (1957). Styles (1984) has inferred an early Holocene age for

this meandering system from its possible lower elevation in relation to the Keach School Terrace. That the meanders were produced by the Sangamon River which presently enters the Illinois Valley just north of Beardstown remains a possibility.

Figure C-4 schematically summarizes generalized stratigraphy, depositional environments and episodes of lower Illinois Valley history. Figure C-5 schematically illustrates in cross-section the stratigraphic relationships of most lithologic units. It is clear the lower Illinois record is as much that of a settling basin as a river and outwash stream.

"Kankakee Flood" - 13,300 B.P.

The Bug Island Paleochannel system and the Bath Terrace developed on Valley train sand and gravel probably in response to the "Kankakee Flood", described as a large discharge down the Illinois Valley during construction of the Valparaiso Moraine system sometime between 14,000 and 15,000 B.P. (Willman and Frye, 1970). Although large discharges probably occurred, there is no indication they were catastrophic. Illinois Valley discharge was probably augmented by drainage from an initial Glenwood phase of Lake Chicago between about 14,500 and 13,500 B.P. (Hansel, et al., in preparation). Oldest radiocarbon dates from the Bug Island Paleochannel system are $14,590 \pm 240$ (ISGS-1285) and $14,300 \pm 290$ B.P. (ISGS-1263) (Table C-1) and correspond with what possibly is initial Glenwood phase discharge. The dates also indicate the Bug Island Paleochannel system and Bath Terrace may just predate about 14,600 B.P. Hansel et al. indicate from about 13,500 to 13,000 the Chicago Outlet was temporarily abandoned in favor of lower outlets. This would cause a relative decrease in Illinois River discharge but the Bug Island Paleochannel system, at least in part, probably remained functional.

13,300 - 12,000 B.P.

Rubey (1952) suggested the Deer Plain Terrace resulted from blockage of the mouth of the Illinois Valley by an aggrading Mississippi floodplain. Dates of $13,390 \pm 190$ (ISGS-894) and $13,010 \pm 140$ B.P. (ISGS-900) from earliest lacustrine silt below the Deer Plain Terrace indicate aggradation of the Mississippi Valley effectively dammed the mouth of the

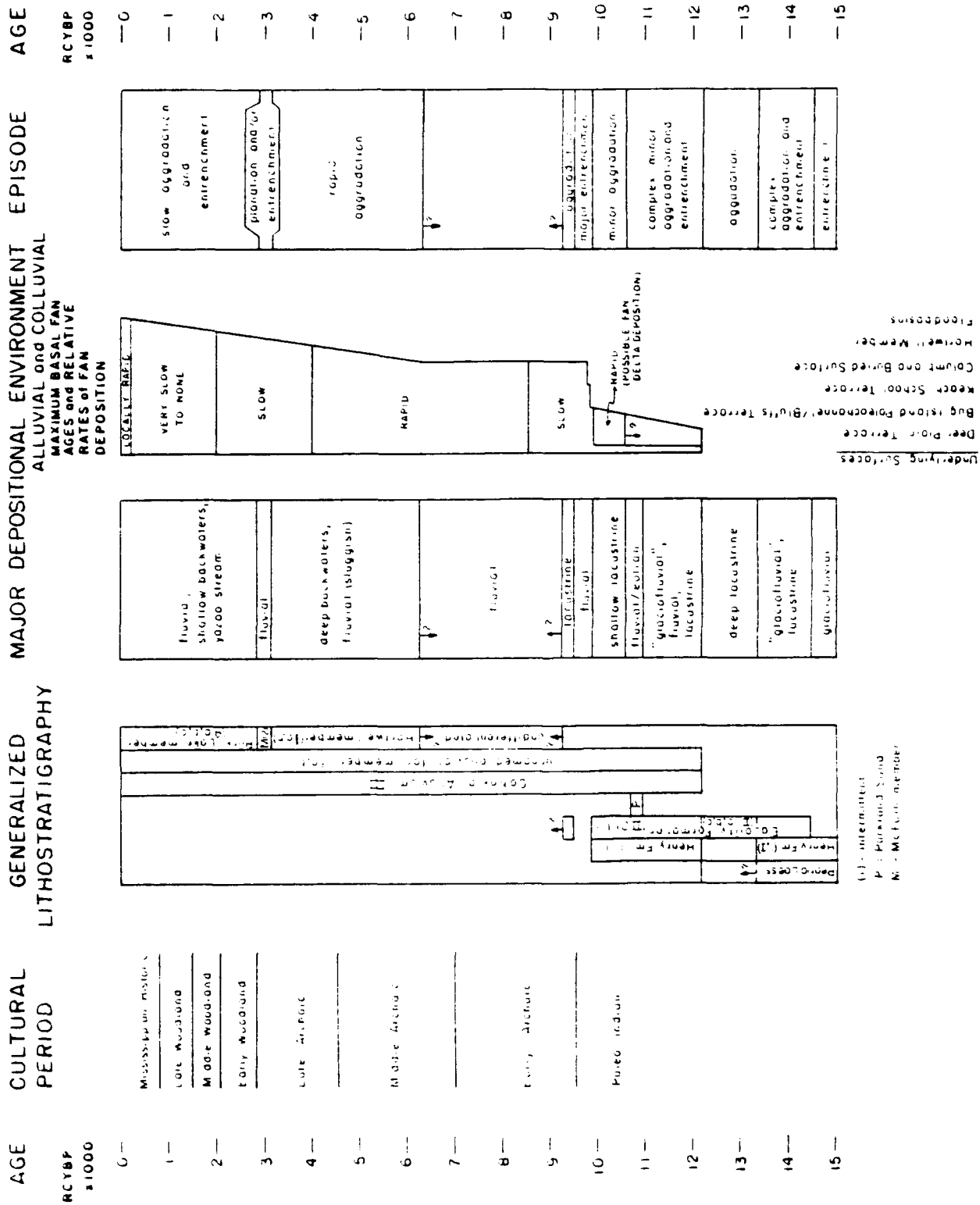


Figure C-4. Generalized summary of lower Illinois River Valley stratigraphy, depositional environments, and episodes of lower Illinois Valley history. Numbers and small letters under lithostratigraphy refer to informal members and submembers (see Figure C-5).

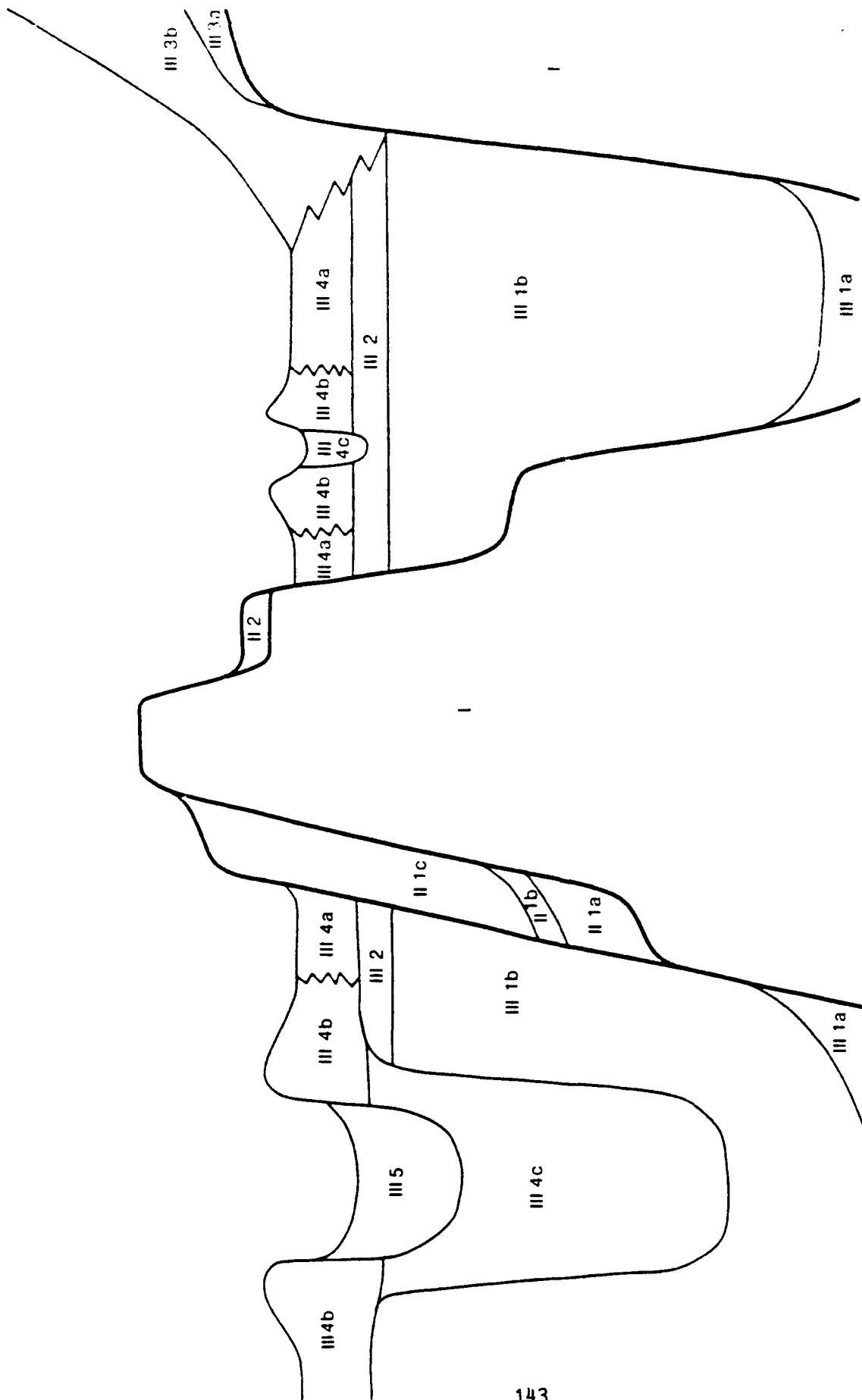


Figure C-5. Schematic cross-section of Illinois Valley. Formations (Roman numerals), members (numbers) and submembers (small letters) identified in Figure C-4.

Illinois Valley prior to 13,300 B.P. Clayton (1982) has inferred periods of aggradation and degradation in the upper Mississippi Valley based upon glacial, lacustrine, and glaciofluvial events in the southern Agassiz and western Superior basins. A period of Mississippi Valley aggradation postulated to have begun prior to 13,500 B.P. and to have continued until about 12,200 B.P. (Clayton, 1982) agrees with blockage of the Illinois Valley.

ISGS-894 and ISGS-900 are directly associated with reddish-brown clay laminae and correspond to a third previously unreported date of $13,360 \pm 100$ B.P. (ISGS-875) from uncarbonized coniferous wood and bark (Hajic, unpublished data). ISGS-875 is also associated with reddish-brown clay laminae in the Eldred District. The reddish brown clay can be traced deep in the subsurface below the Deer Plain Terrace (lake plain) and associated lacustrine clay in the lower Illinois Valley southward to the lower solum of surface soils on the sediment dam part of the Deer Plain Terrace thus indicating the majority of Mississippi Valley aggradation preceded 13,300 B.P. The two lower Illinois Valley dates are from unoxidized, unleached silt with reddish brown clay, some of the first sediments accumulating in the lower Illinois Valley in response to the sediment dam. They mark initiation of a high lake phase (Deer Plain phase) in the lower valley. Farther upvalley dates of $13,360 \pm 240$ (ISGS-1262) and $13,340 \pm 180$ B.P. (ISGS-1284) were recovered at or near the transition from glaciofluvial to lacustrine sediments in the Bug Island Paleochannel and firmly support lake initiation. Thick sequences of green moutmorilloric clay accumulated in the resultant lake until it drained.

Preserved remnants of the lake plain and sediment dam comprise the Deer Plain Terrace in the lower Illinois Valley. A date of $12,000 \pm 100$ B.P. (ISGS-911) is from slackwater and alluvial sediments below a Keach School Terrace remnant which is inset to a Deer Plain remnant. The date indicates the Deer Plain Lake phase probably drained just before 12,000 B.P. and the Deer Plain Terrace is older than 12,000 B.P. A thin, firm, laminated clay unit with pebbles below ISGS-911 records an erosional interval predating 12,000 B.P. (Hajic, 1981b:85). The erosional episode

is probably related to drainage of the Deer Plain lake phase. A date of $12,360 \pm 240$ (ISGS-1283) was obtained from the lacustrine sediment unit in the Bug Island Paleochannel. A date of $12,325 \pm 75$ B.P. (ISGS-415) (Butzer, 1977; Hajic, 1981a) was recovered from lake margin related sediments (Hajic, unpublished data). The exact context of ISGS-415 is questionable, but the two dates narrow the interval of lake drainage and exposure of the Deer Plain Terrace to between about 12,325 and 12,000 B.P. This interval corresponds with an estimated time of initiation of Mississippi Valley downcutting of 12,200 (Clayton, 1982) during the Twocreekan.

In the Mississippi Valley, the deposits below the Deer Plain are composed of coarser alluvium than in the Illinois Valley (Rubey, 1952). A wood sample collected from sandy outwash 23 feet below a terrace surface at the mouth of the Missouri River dated to 12,148 B.P. (Flint and Dewey, 1951). Flint and Dewey (1951) correlated the terrace with the Festus Terrace of Robertson (1938). Goodfield (1965) suggested the date could possibly be from below a Deer Plain remnant. If the date is valid, the remnant is probably not Deer Plain, but rather a younger terrace and fill indicating a second episode of aggradation in the Mississippi Valley to levels approaching that of the Deer Plain. At the Sievers South Quarry section where Deer Plain sediment dam deposits are exposed (Hajic, unpublished data), a second, lower terrace is preserved. This unnamed terrace verifies an erosional episode between Deer Plain formation and a second episode of Mississippi Valley aggradation. A highly dynamic, fluctuating Mississippi is implied.

Flock (1984) names and describes surficial sediments of the Savanna Terrace in the Mississippi Valley extending from Pepin County, Wisconsin to Jackson County, Illinois. He correlates the Deer Plain as part of the Savanna Terrace, and in fact Rubey (1952) originally mapped the Deer Plain in both Mississippi and Illinois Valleys. Flock characterized the upper 1 to 3 meters of Savanna Terrace sediment as being dominated by red and gray clay originating from Lake Superior sources and lake basin(s) farther to the west, respectively. These are the same deposits traced deep into the Illinois Valley subsurface. Interpreting Hajic's dates of

13,360 \pm 100 (ISGS-875), 13,390 \pm 190 (ISGS-894) and 13,010 \pm 140 B.P. (ISGS-900), and Goodfield's date of 12,148 \pm 700 B.P., he concluded the Savanna Terrace formed sometime between 13,000 and 9500 B.P.

Flock considers the red and gray clays to be deposited during flooding of either early Lake Superior sometime between 12,000 and 11,000 B.P., Lake Grantsberg sometime between 12,700 and 11,800 B.P. or/and Lake Agassiz sometime after about 12,000 B.P. In view of earlier discussions, these ages, with possible exception of early Lake Grantsberg ages, are probably too young for the Savanna Terrace and associated reddish brown clay. They are all certainly too young for the considerable thickness of Deer Plain (Savanna Terrace) forming sediments below the surficial reddish-brown clay zone at the mouth of the Illinois Valley.

Elevations of the Illinois Valley mouth sediment dam and documented wave-cut scarps preserved beneath valley margin alluvial fans in the Illinois Valley, along with soil-geomorphic relationships on the Deer Plain Terrace, indicate lake levels were high enough to inundate the entire lower valley and considerable reaches of most tributary streams (Figure C-3).

During this Deer Plain lake phase, the Illinois River, when active, would have been terminating at the head of the lake, probably north of Beardstown. Hansel et al. (in preparation) indicate the Chicago Outlet was operating when Glacial Lake Chicago in the Michigan basin was at the Glenwood level probably between 14,500 and 15,500 B.P. and again between 13,000 and 12,200 B.P. There would have been relatively reduced discharge down the Illinois Valley as the Deer Plain sediment dam formed. Stratified lacustrine fill in the Bug Island Paleochannel may in part reflect distal alluvial fan delta deposition. Terrace elevations are such that surficial sediments associated with the Bath or Bluffs Terrace may also be lacustrine in origin (Figure C-3).

The existence of a lake in the lower to mid-Illinois Valley from after 13,300 B.P. to about 12,325 B.P. indicates conditions unfavorable for deposition of loess with an Illinois Valley source during this

interval and probably Mississippi Valley source as well. The time range is compatible with estimates on terminal loess deposition for the region (McKay, 1977).

12,000 - 9,800 B.P.

A detailed chronology of Illinois Valley events for the period following drainage of the Deer Plain lake phase until about 10,600 B.P. is elusive. It is probably characterized by fluctuating intermittent glaciofluvial, fluvial and lacustrine regimes with only little indication of deposition. Where sediments from this interval have been preserved, such as in the Bug Island Paleochannel, they record a varied history of slackwater deposition with only occasional fluvial input. There is no indication lake levels approached those of the Deer Plain lake phase.

Exposure of a sandy alluvial plain (Bug Island Paleochannel system) is evidenced by the migration of dunes onto Bath Terrace remnants shortly after 10,900 B.P. Radiocarbon dates of $10,900 \pm 80$ (ISGS-1169) and $11,070 \pm 80$ B.P. (ISGS-1277) were obtained from wood samples from a woody peat and underlying fine sandy loam, respectively, which were overlain by dunes and underlain probably by reworked valley train material. The presence of fluvially reworked dunes or absence of dunes on the Bluffs Terrace suggests it may be younger than about 10,900 B.P.

By about 10,600 B.P. and perhaps slightly earlier, another lake phase was initiated in the lower Illinois Valley and continued into the very earliest Holocene, about 9800 B.P. The lake plain which was exposed around the latter date is the Keach School Terrace.

Styles (1984) has recovered organic matter from slackwater sediments at the mouth of Napoleon Hollow which dated 9950 ± 260 (ISGS-819). The sample was above the Keach School Terrace elevation indicating the Keach School lake phase lasted at least through 9950 B.P. Similarly, Hajic (1983a; in preparation) obtained a wood sample from a corresponding slackwater unit in Campbell Hollow on the east side of the Illinois Valley. The material yielded a date of $10,460 \pm 220$ B.P. (ISGS-989). The

Keach School Terrace is incised by an early meander belt of Mauvaise Terre Creek which was contemporaneous with the "multiple channel" system of the Illinois River. Wood from basal slackwater sediment filling the meander belt dated to 9750 ± 70 B.P. (ISGS-1264) (Table C-1) indicating Keach School Terrace formation predates this age.

Keach School lake phase related deposits include a surface veneer of interstratified silt, silty sand and sand on the Keach School Terrace. At several locations the individual fine textured beds were tracable for hundreds of feet (Hajic, unpublished data). Basal laminated alluvial fan silt deposits occurring in the south segment of the preserved Bug Island Paleochannel probably date to this interval. They reflect either rapid alluvial fan accumulation or alluvial fan delta deposition during temporarily higher lake level stands.

A probable shoreline is recorded along the northern extent of the Keach School Terrace at the diagonal chain of Bath Terrace remnants. The Bug Island Paleochannel is either truncated by this Keach School lake phase or at least in part contemporaneous with it because the paleochannel appears to abruptly terminate on the north side of the chain of Bath Terrace remnants.

Changes in relative amounts of discharge entering the lower valley during this interval can be inferred from work in the Lake Michigan Basin by Hansel et al. (in preparation). During the Two Creeks low lake phase in the Lake Michigan Basin, beginning about 12,000 B.P., the Chicago Outlet was temporarily abandoned. Considerably reduced discharge would have been entering the lower Illinois Valley. An increase in discharge would have accompanied reactivation of the Chicago Outlet at about 11,800 B.P. with establishment of the Calumet Lake phase. Shortly before 11,000 B.P. the Chicago Outlet was abandoned again as deglaciation opened outlets to the east and Illinois Valley discharge decreased. It is shortly after 11,000 B.P. that an episode of dune formation is evident in the lower Illinois Valley.

During the Twocreekan interval the Mississippi River is inferred to

have been downcutting (Clayton, 1982). After a brief period of aggradation, another interval of downcutting occurred until about 10,800 B.P. The beginning of the aggradational episode at this time may correspond with initiation of the Keach School lake phase. According to Clayton and Moran (1982) and Clayton (1982), the Marquette advance of the Superior Lobe was probably responsible for blocking eastern outlets of Lake Agassiz initiating the Emerson Phase in that basin at 9900 B.P. With blockage, Lake Agassiz drained into the Mississippi River via the Minnesota River. The episode of Mississippi Valley downcutting which this chain of events initiated caused the Keach School lake phase to drain and the Illinois River to downcut rapidly. Lake drainage probably caused the streamlining of several Bath Terrace remnants along the south and east part of the diagonal chain of Bath remnants.

9800 - 7000 B.P.

Initial downcutting occurred in an anastomosing pattern of 1 to 2, and possibly 3, channels which are best expressed immediately north and south of highway U.S. 36. Morphology of this channel system may have been influenced in part by Keach School lake drainage. This channel system was only temporary and with continued rapid downcutting some branches were abandoned and preserved. There is some evidence to suggest the preserved bed of this anastomosing system was subaerially exposed for an undetermined period of time. An early Archaic site, now buried by late Holocene deposits, is preserved on this surface in the Eldred District and there are some indications of associated soil development (Hassen and Hajic, 1983). This buried surface, which is most extensive south of the Hillview District, is informally referred to as the Columbiana surface.

Ultimately, downcutting was on the order of at least 15.2 m for channel bases. River stage fluctuation is not yet clear. There is no evidence of subaerial exposure of Holocene surfaces (i.e., floodplain) greater than 5 to 6 m below present floodbasins. Near-surface sediments below the Keach School Terrace indicate subsequent Holocene river (and flood) and lake stages did not eclipse Keach School elevations to leave a recognizable overbank deposit. Apparently all fluvial and lacustrine events post-dating the very early Holocene downcutting were confined to

the incised channels defined by the Columbiana, Keach School and older terrace margins, and the bedrock valley walls.

Maximum downcutting was accomplished by about 9500 B.P. and a probable lake phase, restricted to incised channels, ensued for an unknown length of time. Radiocarbon dates on wood from slackwater(?) clay at relatively low elevations are 9480 ± 130 (ISGS-1135) and 9300 ± 150 (ISGS-1122) (Table C-1).

The period between 9000 and 7000 B.P. is not well known and there are only several areas where deposits from this interval are recognized at all. The present general location of the Illinois River is currently viewed as the location of the main channel of the several utilized during downcutting with only several areas of exception. This view tends to be supported by Corps of Engineers boring records along artificial Illinois River levees which indicate the greatest depths of fine textured sediments found in the valley. The Illinois River, when functioning as such, has apparently assumed a general position along the western valley margin and has not varied significantly throughout the Holocene. Largely negative evidence for this is derived from the slackwater Hartwell member of the Cahokia Alluvium. The Hartwell, filling paleochannels incised during the initial Holocene and deposited between about 6000 and 3000 B.P., constitutes the bulk of Holocene valley fill, yet it is a very uniform deposit for considerable thickness at any given location. Texturally and structurally it exhibits little, if any, indication of alluvial channel, bar, natural levee, or floodplain facies.

7000 - 3000 B.P.

Infilling of paleochannels was possibly underway by at least around 7000 B.P. as indicated by stratigraphic contexts of a buried Archaic horizon at the Napoleon Hollow Site (Styles, 1984). Sometime before 6400 B.P. the Illinois River clearly established its course along the western side of the valley south of the Hillview district and is evidenced by remnants of a well developed natural levee system. The Quasar site, a shallowly buried Archaic horizon within these natural levee deposits, yielded a date of 6320 ± 90 (ISGS-1278) (Table C-1). In downcut

paleochannel segments abandoned by Illinois River straightening and channel definition by first subaqueous, then subaerial natural levee formation, Hartwell lacustrine or nearly slackwater conditions were established by 5700 ± 140 B.P. (ISGS-930) and most likely continued beyond 3650 ± 70 B.P. (ISGS-903) (Table C-1). Hartwell deposition occurred in relatively deep backwaters. Deposition was relatively rapid and paleochannels infilled to several meters below the present floodplain surface. Structure of lower soil horizons is preserved at the top of the Hartwell indicating an emergent floodplain.

3000 B.P. - 1920's

The presettlement general structure of floodbasins and natural levees evolved during the 500 years predating about 2500 B.P. Around 3000 B.P. a primarily erosional episode, referred to as the McFain event, effectively planed the Hartwell surface, reworked terrace margins, and scoured portions of the Columbiana surface. The associated McFain member probably represents a lag resulting from either a large Illinois River discharge or active yazoo streams meandering across the emergent floodplain. A radiocarbon date of 2890 ± 75 B.P. (ISGS-143) on shell (Coleman, 1974) was obtained from deposits interpreted to be the McFain.

Buck Lake member deposition followed in shallow backwater lakes, possibly intermittent, as a floodbasin network of coalescing tributary creeks rapidly built a natural levee system. Slow aggradation occurred in floodbasins. The Illinois River went through minor redefinitions of its channel position and there is evidence to suggest a second natural levee set, finer textured than the first, rapidly developed during this interval. Early Woodland settlements are common on the natural levees indicating they were well established by about 2500 B.P. Dates of 2420 ± 70 B.P. (ISGS-1120) and 1980 ± 80 B.P. (ISGS-1084) were recovered from the bottom and top respectively of fill from one of the floodbasin yazoo stream channels (Table C-1). The dates may indicate a rough range for the infilling and final deactivation of the yazoo system, but clearly more dates will be necessary.

The Illinois River has maintained its west side channel with little

modification throughout the last 2500 years as indicated by Early Woodland settlements on Illinois River natural levees (Farnsworth, 1976; Butzer, 1977).

APPENDIX D
Scope of Work

**CULTURAL RESOURCE SURVEY OF SELECTED PORTIONS OF THE
MEREDOSIA AND MEREDOSIA LAKE DRAINAGE AND LEVEE DISTRICTS**

SCOPE OF WORK

1. Statement of Work. The work to be accomplished by the Contractor consists of furnishing all labor, supplies, materials, plant and equipment necessary to perform a Cultural Resource Survey of selected portions of the Meredosia and Meredosia Lake Drainage and Levee Districts, Scott, Cass and Morgan Counties, Illinois, and furnish a written report thereon as set forth in the Scope of Work.

2. Location and Description of Study Area. The project area is situated in the Illinois River floodplain between river miles 65.0-72.0 (Meredosia D & LD) and 72.0-79.0 (Meredosia Lake D & LD) in Scott, Cass and Morgan Counties, Illinois. The total area to be physically surveyed consists of 3140 acres and represents approximately a 20% sample of the entire area contained within the two districts (15,725 acres).

3. Study Plan.

3.1 General. The Contractor is responsible for the formulation, justification and conduct of the study to include the design and execution of all survey methods and procedures as well as the presentation of the study results unless otherwise set forth in this Scope of Work.

3.2 Sample Design. The survey will be structured so as to investigate a representative portion of each topographic and physiographic zone (i.e., ridges, terraces, etc.). As a result, the Contractor will restrict his investigation to a 20% stratified random sample of appropriately selected zones. Before initiating the fieldwork, the Contractor will provide the Contracting Officer's Representative with maps showing the sample units selected and with a narrative describing how the units were chosen and describing the research goals and objectives, as these relate to larger questions about Illinois River Valley prehistory (i.e., a "research design"). The Contracting Officer's Representative will comment (see Paragraph 6.1).

3.3 Principal Informant Interviews. Principal Informant Interviews constitute preliminary surveys based on verbal descriptions of site locations. The Contractor will contact amateur archaeologists and collectors within the region in an attempt to identify the location of previously known archaeological or historic sites within the Meredosia and Meredosia Lake Drainage and Levee Districts. On-site analysis shall consist only of a visual confirmation of the verbal description.

3.4 Pedestrian Survey. The Pedestrian Survey will consist of an intensive on-the-ground survey of each sample unit, sufficient to determine the number and extent of cultural resources within each unit. This process will include one complete surface collection at each identified site.

3.5 Lab Procedures. Artifacts collected during survey activities shall be washed, permanently labeled and catalogued according to standard lab procedures. These collections shall be analyzed in an attempt to determine each site's temporal affiliation and horizontal surface distribution. All artifacts will be separated into various general

categories, then subdivided into smaller, functional and stylistic categories. These distributions shall be quantitatively assessed in a professional, concise manner.

3.6 Curation of Material. The report shall contain a statement indicating the exact location of all materials and records resulting from this contract work. This statement shall include at a minimum, the name and address of the curatorial building, the storage room number, and if possible, the rack, shelf or cabinet number where this material is stored. Containers in which artifacts are stored shall be clearly labeled "Property of the U.S. Government, St. Louis District, Corps of Engineers."

4. Final Report. The Contractor shall prepare a written report which presents and interprets survey results, and describes in detail data collection techniques. A discussion of each site located, its cultural affiliation and artifact assemblage, as well as their relation to other sites found during the survey shall be presented in the text of the report. These data shall then be compared to other previously reported sites in the Illinois River Valley and surrounding areas in order to place the results of this study into regional context. In addition the Final Report shall include the following:

- a. U.T.M. coordinates of each site, detailed site-specific descriptions, locational data and maps attached as appendix to the Final Report.

- b. Maps which accurately define site locations, site numbers, areas surveyed, and ground cover conditions as well as other pertinent data. These data must be recorded on U.S.G.S. topos (scale 1:24000) although other maps may be used as well.

- c. No hand lettering is acceptable other than that necessary to record data on base maps.

- d. Oversized maps will be folded and included in a pocket in the back of the appropriate report section or appendix.

- e. A full set of reproducible maps, plates and drawings.

- f. Black and white prints (half-tones) of diagnostic and functionally significant artifacts will be incorporated into the report body or attached as appendix.

- g. A photographic log of annotated 35mm slides, showing each phase of lab and fieldwork in progress shall be included with Final Report original.

- h. An abstract not to exceed one typewritten page.

- i. Completed site forms shall be submitted for each site identified during these surveying activities.

5. Permits and Rights of Entry. Rights of Entry upon work sites for performance of work under this contract shall be obtained by the Contractor. The Contractor shall obtain the necessary approval to enter on any private property and to permanently remove any artifacts recovered during subsequent surveying activities. Should access to certain portions of this project area referenced in Paragraph 2 above be denied, the actual amount of this order will be decreased in an amount equal to the percentage of difference between the original required acreage and that acreage actually surveyed.

6. Schedule of Work.

6.1 Research Design. Research Design (see Paragraph 3.2) shall be submitted to the Contracting Officer's Representative within 20 days of the date of the delivery order. The Contracting Officer's representative will review and comment within 7 calendar days of receipt of Research Design.

6.2 Fieldwork. All fieldwork related to this item shall be completed within 200 days after the date of the delivery order.

6.3 Draft Report. Five copies of the draft report shall be submitted by the Contractor to the Contracting Officer's Representative within 90 days after fieldwork is completed. Government representatives will review the report for compliance with the requirements of the contract and will return the preliminary report, together with any written comments thereon, which may require changes in the report, to the Contractor within 50 calendar days after its receipt. The report shall be organized in a manner consistent with the St. Louis District report format guidelines. The title page shall be organized in a manner consistent with the St. Louis District title page format guides.

6.4 Final Cover. While the St. Louis District is reviewing the contractor's draft report, the St. Louis District will prepare report covers for the final report and will forward these to the Contractor with draft comments. The Contractor shall be responsible for binding the final report in these covers, using Plastic Spiral Binding.

6.5 Final Report. The Contractor shall submit 30 bound copies of the Final Report, including the original copies signed by the principle investigator, to the Government within 30 days after the Contractor receives the St. Louis Districts written comments. A set of reproducibles of all drawings, plates and other graphics, including site forms, shall be furnished at the time of submission of the Final Report.

7. Extensions. In the event these schedules are exceeded due to causes beyond the control and without fault or negligence of the Contractor, this delivery order will be modified in writing, and the contract completion date will be extended one calendar day for each calendar day of delay.

DLC-1

Master core number: 536
 Location: SE, SE 1/4, Sec. 36, T17N, R13W, Cass County,
 Landscape position: Bug Island Channel
 SCS mapped soil: Ambraw cla. loam
 Elevation: 132.8m (436ft.)
 Cored to: DSL, JEC
 Described to: ERH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 111 SOLUH (0- 44)	black (2.5Y2/0) to olive gray (5Y4/2) cla. loam to loam, clear boundary.	CL
111- 127 C(UH) (44- 50)	olive gray (5Y4/2) loam, weak coarse subangular blocks, noneffervescent, one large 2.5Y2/0 loam krutovina, very abrupt boundary.	ML
127- 273 DL (50-107)	very dark gray (10YR3/1) to olive brown (2.5Y4/4) loam, fine sand to fine and medium sand, gradual boundary.	SP
273- 360 DU (107-142)	olive brown (2.5Y4/4) medium sand, very slight effervescent, clear boundary.	SP
360- 420+DU (142-180)	olive brown (2.5Y4/4) pebbly medium and coarse sand, strongly effervescent, refusal.	SW

DLC-2

Master core number: 537
 Location: SW, SW 1/4, Sec. 36, T17N, R13W, Cass County,
 Landscape position: dune on Bath terrace edge
 SCS mapped soil: Spearta loam, sand
 Elevation: 133.5m (438ft.)
 Cored to: DSL, JEC
 Described to: EFH

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 82 SOLUH (0- 32)	very dark brown (10YR2/2) to dark grayish brown (10YR4/2) loam, fine sand, abrupt boundary.	SP
82- 158 SOLUHL (32- 62)	dark grayish brown (10YR4/2) to grayish brown (2.5Y5/2) silt loam, with many fine dark yellow- ish brown (10YR4/6) and olive brown (2.5Y4/4) mottles, clear boundary.	ML
158- 203 MDL (62- 80)	dark yellowish brown (10YR4/4) and light brownish gray (2.5Y6/2) fine sand, loam and sand, silt loams, weak, laminated and stratified, with common medium yellowish brown (10YR5/6) mottles, weak coarse subangular blocks, noneffervescent, abrupt boundary.	SP
203- 480 OL (80-180)	dark yellowish brown (10YR4/2) medium and coarse sand, single grains, noneffervescent, indeterminate boundary.	SP
480- 560 DL (180-220)	grayish brown (2.5Y5/2) medium to coarse sand, single grains, noneffervescent, indeterminate boundary.	SP
560- 630 UL (220-248)	dark olive gray (5Y3/2) silt, massive, noneffervescent, indeterminate boundary.	ML
630- 690+DU (248-272)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) coarse, very coarse sand, and pebbles, strongly effervescent, refusal.	SW

DL0-4

Master core number: 533
 Location: SW, SW, SE, Sec. 35, T17N, R13W, Cass County,
 Landscape position: Bug Island Channel
 SCS mapped soil: Ambrow clay loam
 Elevation: 132.5m (434ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 40 SFOL (0- 16)	lean boundary.	CL
40- 145 SOLUM (16- 57)	silt loam espersedon channels to silt, clay loam at base, clear boundary.	ML
145- 230 MDL (57- 94)	grayish brown (2.5Y5/2) silt, fine sandy loam, with common medium yellowish brown (10YR5/6) mottles, noneffervescent, few 2.5Y3/2 fine sand, loam lenses toward base, clear boundary.	SF
230- 285 MDL (94- 112)	light brownish gray (2.5Y6/2) fine sand and grayish brown (2.5Y5/2) silt, with common medium light olive brown (2.5Y5/6) mottles, noneffervescent, gradual boundary.	SF
285- 425 DL (112- 167)	greenish gray (5Y5/1) sand, silt, laminated with few medium sand lenses toward base, noneffervescent, few thin Fe lenses throughout, abrupt boundary.	ML
425- 620+U/DL (167- 200)	olive (5Y5/3) medium to coarse sand with few pebbles toward base, noneffervescent, refusal.	M

DL0-5

Master core number: 539
 Location: SW, SW, SE, Sec. 35, T17N, R13W, Cass County,
 Landscape position: Bug Island Channel
 SCS mapped soil: Ambrow clay loam
 Elevation: 132.5m (434ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 162 SOLUM (0- 64)	silt loam espersedon with clay loam to silt, clay loam subsoil, clear boundary.	ML
162- 200 MDL (64- 79)	grayish brown (2.5Y5/2) sand, silt loam to fine sand, loam, with common medium light olive brown (2.5Y5/6) mottles, weak coarse subangular block, noneffervescent, few fine sand lenses at base, abrupt boundary.	SF
200- 285 DL (79- 104)	yellowish brown (10YR5/8) medium sand, single grain, noneffervescent, gradual boundary.	SF
285- 490 U/DL (104- 193)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) medium to coarse sand, single grain, noneffervescent, indeterminate boundary.	SF
490- 675+U/DL (193- 266)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) coarser, very coarse sand and pebbles, slightly effervescent, refusal.	SW

DL0-5

Master core number: 540
 Location: SW, SW, SE, Sec. 35, T17N, R13W, Cass County,
 Landscape position: Bug Island Channel
 SCS mapped soil: Tide silt, clay loam
 Elevation: 132.5m (434ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 120 SOLUM (0- 47)	heavy silt loam, clear boundary.	ML
120- 226 MDL (47- 89)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) silt, with common medium yellowish brown (10YR5/8) mottles, weak coarse subangular block, noneffervescent, few sand lenses toward base, abrupt boundary.	ML
226- 360+DL (89- 142)	yellowish brown (10YR5/6) medium to coarse sand, single grain, noneffervescent, refusal.	SP

DLC-6

Master core number: 541
 Location: SE1/4, SW1/4, Sec. 35, T17N, R13W, Cass County,
 Landscape position: Relict Illinois River natural levee
 SFS mapped soil: Ambraw clay loam
 Elevation: 132.3m (434ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 164 SOLUM (0- 65)	clay loam to silt, clay, abrupt boundary.	CL
164- 235 MDL (65- 93)	grayish brown (2.5Y5/2) medium to coarse sand, stratified with 2.5Y6/2 silt, silts with common medium dark yellowish brown (10YR4/6) mottles, single grain and massive noneffervescent, clear boundary.	SP
235- 360 OL (93-150)	yellowish brown (10YR5/6) fine to medium sand, single grain, noneffervescent, indeterminate boundary.	SP
360- 666 O/DL (150-260)	light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, indeterminate boundary.	SP
666- 790 UL (260-311)	dark gray (5Y4/1) silt, massive, noneffervescent, few pebbles and sand mixed possibly due to augering, indeterminate boundary.	ML
790- 840+UL (311-331)	light brownish gray (2.5Y6/2) coarse, very coarse sand and pebbles, single grain, noneffervescent, refusal.	SW

DLC-7

Master core number: 542
 Location: SW1/4, SW1/4, Sec. 35, T17N, R13W, Cass County,
 Landscape position: Relict Illinois River natural levee
 SFS mapped soil: Dickinson fine sand, loam
 Elevation: 133.2m (437ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 100 SOLUM (0- 39)	fine sand, loam, clear boundary.	SF
100- 340 O/DL (39-134)	light olive brown (2.5Y5/4) and brown to dark brown (10YR4/3), and dark yellowish brown (10YR4/4) medium to fine sand, dark yellowish brown (10YR4/4) very fine sand, loam and grayish brown (2.5Y5/2) silt, yellowish brown (10YR5/6) Fe lenses throughout, weak coarse sub-angular block, to massive, noneffervescent, strata range from 1-15cm, thickness, silts primarily toward base in thin lenses, clear boundary.	SF
340- 430 OL (134-165)	dark yellowish brown (10YR4/4) medium sand, single grain, noneffervescent, gradual boundary.	SP
430- 570 O/DU (165-224)	light olive brown (2.5Y5/4) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
570- 840+D/UU (224-331)	grayish brown (2.5Y5/2) coarse, very coarse sand and few pebbles, single grain, very slightly effervescent, refusal.	SW

MLC-2

Master core number: 543
 Location: SE, SE, SW, Sec. 26, T17N, R13W, Cass County,
 Land Capa position: Bluffs terrace (?)
 SCS mapped soils: Sparta loam, sand
 Elevation: 134.7m (441ft.)
 Cored by: DGL, JEL
 Described by: DGL

13- 25 B1 (5- 10)	light olive brown (2.5Y5/4) silt loam, weak fine subangular blocks, friable, noneffervescent, clear boundary.	ML
25- 51 B22 (10- 20)	olive brown (2.5Y4/4) heavy silt loam, with many fine dark yellowish brown (10YR4/2) mottles, weak medium prismatic breaking to weak fine angular blocks, friable, noneffervescent, continuous dark grayish brown (2.5Y4/2) thin coats on ped faces and pores, clear boundary.	ML
51- 80 B23 (20- 31)	olive brown (2.5Y4/4) silt loam, with many fine dark yellowish brown (10YR4/6) mottles, moderate medium and coarse prismatic, friable, noneffervescent, continuous dark grayish brown (2.5Y4/2) thin coats on pores and few thin clay spins on ped faces, gradual boundary.	ML
80- 120 B3 (31- 47)	olive brown (2.5Y4/4) silt loam, with many fine dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocks, friable, noneffervescent, common thin dark grayish brown (2.5Y4/4) coats in pores, abrupt boundary.	ML
120- 260 11C (DL) (47-102)	olive bn (2.5Y4/4) fine sand, single grains, loose, noneffervescent, indeterminate boundary.	SP
260- 360 UU (102-142)	grayish brown (2.5Y5/2) and olive gray (5Y4/2) clay and silt, clay and dark yellowish brown (10YR4/4) fine sand, and rarely brown to dark brown (7.5YR4/4) clay, strongly effervescent, probably originally laminated and stratified, indeterminate boundary.	CL
360- 510 UU (142-201)	dark yellowish brown (10YR3/4) poorly sorted medium and coarse sand with common pebbles, slightly to strongly effervescent, indeterminate boundary.	SW
510- 550 UU (201-217)	dark yellowish brown (10YR3/4) and very dark brown (10YR2/2) poorly sorted medium and coarse sand with common pebbles, strongly effervescent, indeterminate boundary.	SW
550- 600 UU (217-236)	very dark grayish brown (2.5Y3/2) and very dark gray (5Y3/1) sand, clay and clayey sand, slightly to strongly effervescent, possibly slope from 250-360, not certain, indeterminate boundary.	CL

Depth cm Soil Horizon
(in.) or Zone Unified Soil Classification

0- 113 SnLUM (0- 44)	fine loams sand, clear boundary.	SP
113- 126 OL (44- 50)	dark yellowish brown (10YR4/4) medium sand, loam, massive, noneffervescent, abrupt boundary.	SP
126- 212 MDL (50- 53)	light brownish gray (2.5Y6/2) heavy silt loam to silty clay loam, with common medium yellowish brown (10YR5/4) mottles, moderate coarse subangular blocks, noneffervescent, very faint pinkish gray (5YR7/2) hue at 135-140cm., Fe corrosion zone at 194-195cm., abrupt boundary.	ML
212- 235 OL (53-112)	dark yellowish brown (10YR4/6) coarse sand, single grains, noneffervescent, light brownish gray (2.5Y6/2) sand, loam lens at 235-240cm., abrupt boundary.	SP
235- 275 0/0U (112-144)	light olive brown (2.5Y5/4) fine to medium sand, single grains, very, slightly effervescent, indeterminate boundary.	SP
275- 510 0/0U (144-201)	light olive brown (2.5Y5/4) to light yellowish brown (2.5Y6/4) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
510- 600 0/0U (201-236)	light olive brown (2.5Y5/4) coarse, very coarse sand, and pebbles, very slightly effervescent, pebbles max. 8 diam. of 1.0cm., refusal.	SW

Depth cm Soil Horizon
(in.) or Zone Unified Soil Classification

0- 13 A1 (0- 5)	black (10YR2/1) heavy, silt loam, moderate fine granular, friable, noneffervescent, plentiful medium and fine roots, abrupt boundary.	ML
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Master core number: 544
 Location: SE, SE, SE, Sec. 26, T17N, R13W, Cass Co., north of "T" intersection west end of Honey Point Rd. and 6ft. west of ditch.
 Landscape position: Illinois River natural levee.
 SCS mapped soils: Ambraw clay loam
 Elevation: 131.7 m. (432ft.)
 Cored by: David S. Leish and Julia E. Clifton, 11-30-83
 Described by: Edwin R. Harjo, 7-9-84

DLU-10

Master core number: 545

Location: SE 1/4 SW 1/4 Sec. 25, T17N, R13W, Cass Co., east of second telephone pole east of ditch b. DLU-9 and 20 ft. north of Hone. Point road

Landscape position: top of sand, ground

Surface archeology: none

SES mapped soil: Dickinson fine sand, loam

Elevation: 132.5m. (434ft.)

Cored by: David S. Leish and Julie E. Clifton, 11-30-83

Described by: Edwin E. Haidle, 7-5-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 25 4p (0- 10)	very dark brown (10YR2/2) fine sand, loam, ver., weak fine granular, very friable, nonferrescent, clear boundary.	SP
25- 52 R21 (10- 20)	dark brown (10YR3/5) fine sand, loam, with man, fine dark yellowish brown (10YR3/4) mottles, weak fine subangular block, ver. friable, nonferrescent, gradual boundary.	SP
52- 77 R22 (20- 30)	dark yellowish brown (10YR3/4) fine sand, loam, weak medium subangular block, friable, nonferrescent, common dark brown (10YR3/5) coats on red faces, gradual boundary.	SP
77- 95 R3 (30- 37)	dark yellowish brown (10YR3/6) fine sand, loam, weak medium subangular block, friable, nonferrescent, gradual boundary.	SP
95- 135 C (37- 53)	dark yellowish brown (10YR3/6) fine sand, loam, single grains, looser, nonferrescent, indeterminant boundary.	SP
135- 270 OL (53- 106)	olive brown (2.5Y4/4) and light olive brown (2.5Y5/4) and dark yellowish brown (10YR4/6 and 10YR4/4) fine sand, few olive gra. (2.5Y5/2) coarse silt laminae, nonferrescent, indeterminant boundary.	SP
270- 350 OL (106- 138)	dark yellowish brown (10YR4/4) fine sand and grayish brown (2.5Y5/2) silt, clay and clay laminae, originally stratified, nonferrescent, indeterminant boundary.	CL
350- 390 OL (138- 154)	dark yellowish brown (10YR4/4) fine sand, nonferrescent, indeterminant boundary.	SP
390- 500 OL (154- 220)	dark yellowish brown (10YR4/4) fine sand, strongly effervescent, two grayish brown (2. 5Y5/2) silt laminae, indeterminant boundary.	SP
500- 560 OL (220- 220)	poorly sorted pebbly sand, no recovery.	SW

DLU-11

Master core number: 546

Location: SE 1/4 SW 1/4 Sec. 25, T17N, R13W, Cass Co., 16 ft. west of 5th telephone pole east of ditch b. DLU-9 and on north side of road

Landscape position: on dune scarp

Surface archeology: none

SES mapped soil: Dickinson fine sand, loam

Elevation: 132.5m. (434ft.)

Cored by: David S. Leish and Julie E. Clifton, 11-30-83

Described by: Edwin E. Haidle, 7-5-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 22 A1 (0- 9)	very dark brown (10YR2/2) loam, fine sand, ver., weak fine subangular block, very friable, nonferrescent, gradual boundary.	SP
22- 79 B2 (9- 31)	dark yellowish brown (10YR3/4) loam, fine sand, very weak medium subangular block, ver. friable, nonferrescent, gradual boundary.	SP
79- 108 B3 (31- 43)	dark yellowish brown (10YR3/6) loam, fine sand, very weak medium subangular block, ver. friable, nonferrescent, clear boundary.	SP
108- 210 C (43- 83)	dark yellowish brown (10YR4/6) and yellowish brown (10YR5/6) fine sand, single grain, looser, nonferrescent, ver. abrupt boundary.	SP
210- 315 OL (83- 124)	dark brown (7.5YR3/4) and dark yellowish brown (10YR4/4) fine sand with moderate laminae of fine sand, loam and loam, fine sand, stratified, nonferrescent, ver. abrupt boundary.	SP
315- 330 OL (124- 130)	dark yellowish brown (10YR4/6) fine sand, nonferrescent, ver. abrupt boundary.	SP
330- 460 OL (130- 181)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/6) fine sand, nonferrescent, indeterminant boundary.	SP
460- 540 O/DU (181- 213)	dark yellowish brown (10YR3/4) and olive brown (2. 5Y4/4) fine sand, slightly to strongly effervescent, three thick laminae of dark grayish brown (2.5Y4/2) and dark brown to strong brown (7. 5YR4/4) coarse silt and silt, refusal.	SP

DLC-12

Master core number: 547
 Location: SE 1/4 Sec. 25, T17N, R13W Cass Co., 20ft. north of Hone, Point rd.
 and due north of second telephone pole west of drainage ditch in
 paleochannel to east
 Landscape position: mid-slope from high sand, area to west and narrow
 paleochannel to east
 Surface archeological none
 SCS mapped soil: Dickenson fine sand, loam to Hoxeyton sandy loam
 Elevation: 132.3m. (434ft.)
 Cored by: David S. Leigh and Julia E. Clifton, 12-1-83
 Described by: Edwin R. Hajic, 7-9-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 24 A1 (0- 9)	very dark brown (10YR2/2) fine sand, loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	SP
24- 43 B1 (9- 17)	very dark grayish brown (10YR3/2) loam, weak medium subangular blocky, friable, noneffervescent, few Fe nodules, gradual boundary.	ML
43- 81 B2 (17- 32)	dark brown (10YR3/3) fine sand, loam, weak medium prismatic, friable, noneffervescent, common Fe nodules, gradual boundary.	SP
81- 90 B3 (32- 35)	dark brown (10YR3/3) fine sandy loam, with common fine dark yellowish brown (10YR3/6) Fe mottles, weak medium subangular blocky, very friable, noneffervescent, clear boundary.	SP
90- 125 11C1 (35- 49)	olive brown (2.5Y4/6) and dark yellowish brown (10YR3/6) fine sand, single grain, loose, noneffervescent, abrupt boundary.	SP
125- 149 111C2 (49- 59)	dark yellowish brown (10YR3/4) fine sand, loam and one thin bed of grayish brown (2.5Y5/2) silty clay at 136-140cm., unit is moderately laminated, silty clay bed has many fine dark yellowish brown (10YR4/6) Fe mottles, noneffervescent, abrupt boundary.	SP
149- 178 10B1b (59- 70)	olive (5Y5/3) silty clay, with many fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) mottles, few Mn mottles, weak fine platy, to weak medium subangular blocky, firm, noneffervescent, few very dark gray (5Y3/1) thin to moderately thick coats in pores, clear boundary.	CL
178- 222 0B2b1 (70- 87)	brown to dark brown (7.5YR4/4) and olive (5Y5/3) clay loam, few dark yellowish brown (10YR4/4) poorly sorted sand laminae at base, few pebbles throughout unit, with few medium and fine dark yellowish brown (10YR4/6) mottles, weak medium subangular blocky, firm, noneffervescent, few dark gray (5Y4/1) thin to moderate, thick coats in pores, abrupt boundary.	CL

222- 280 VICb1
(87-110)

280- 322 DU
(110-127)

322- 385 UU
(127-152)

385- 480 DU
(152-189)

dark yellowish brown (10YR4/4) fine sand, with
few grayish brown (2.5Y5/2) fine sand, silt and
silt laminae, laminated unit, noneffervescent,
very abrupt boundary.
 laminated olive brown (2.5Y4/4) very fine sand
and silt and grayish brown (2.5Y5/2) silt and coarse
silt, slightly to strongly effervescent, abrupt
boundary.
 dark olive gray (5Y3/2) and very dark gray
(5Y3/1) and olive gray (5Y4/2) very fine sand,
silt and coarse silt, strongly laminated,
slightly to strongly effervescent, common laminae
of very fine uncarbonized organic matter, very
abrupt boundary.
 dark grayish brown (2.5Y4/2) fine sand, with some
coarse sand and very few pea-sized pebbles,
violently effervescent, unknown lower boundary.

DLC-13

Master core number: 548
 Location: SW 1/4 Sec. 25, T17N, R13W, Cass County
 Landscape position: Bug Island channel
 SCS mapped soil: Beaucaup silt, clay loam
 Elevation: 131.1m (430ft.)
 Cored by: DEL, JEC
 Described by: DEL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 200 SOLUM (0- 79)	silty clay loam, clear boundary	CL
200- 240+0/DU (79- 94)	light olive brown (2.5Y5/4) fine sand, very slightly effervescent, refusal.	SP

DLC-14

Master core number: 549
 Location: SE, SE, SW, Sec. 25, T17N, R13W, Cass Co., left, north and 6ft. west of
 buried cable post #L1226-P4
 Landscape position: footslope of Bath (?) Terrace remnant
 Surface archeology: none
 SCS mapped soil: Hoopeston sand, loam
 Elevation: 121.5m. (430ft.)
 Cored by: David S. Leish and Julia E. Clifton, 12-1-83
 Described by: Edwin R. Jettie, 7-9-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 23 AP (0- 9)	black (10YR2/1) fine sand, loam, weak fine granular, friable, nonferrescent, abrupt boundary.	SP
23- 40 B1 (9- 16)	mottled very dark brown (10YR2/2) and dark yellowish brown (10YR4/4) fine sand, loam, with man, fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) Fe mottles, weak fine subangular blocky, friable, nonferrescent, clear boundary.	SP
40- 70 B2 (16- 28)	dark yellowish brown (10YR4/4) loam, with man, fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) mottles, weak medium subangular blocky, friable, nonferrescent, very few thin very dark grayish brown (10YR3/2) coats in pores, clear boundary.	ML
70- 94 B3 (28- 37)	yellowish brown (10YR5/4) fine sandy loam, with many fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, friable, nonferrescent, clear boundary.	SP
94- 129 C1(OL) (37- 51)	yellowish brown (10YR5/4) loamy fine sand and fine sand, with common medium dark yellowish brown (10YR4/6) and yellowish brown (10YR5/6) mottles, very friable to single grain loose, nonferrescent, very abrupt boundary.	SP
129- 207 OL (51- 81)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/6) fine sand, nonferrescent, few laminae of medium sand, two laminae in lower half of brown (10YR5/3) silty clay, abrupt boundary.	SP
207- 255 O/DL (81-100)	grayish brown (2.5Y5/2) and grayish brown (2.5Y5/3) silt and silty clay, and dark yellowish brown very fine and fine sand, strongly laminated, nonferrescent, fine sand from 239-253cm., one thin olive (5Y4/4) laminae, very abrupt boundary.	CL
255- 290 OL (100-114)	dark yellowish brown (10YR3/4) fine sand, nonferrescent, indeterminate boundary.	SP
290- 480+PU (114-182)	grayish brown (2.5Y5/2) fine sand, slightly to strongly effervescent, one dark grayish brown (2. 5Y4/2) sandy silt laminae at about 450cm., refusal.	SP

BUCH-5

Master core number: 550
 Location: NW 1/4, NE 1/4, Sec. 36, T17N, R13W, Cass Co., 25ft. south of Honey Point road across road from white two story house
 Landscape position: dunes on both (75) Terrace remnant
 Surface archeology: none
 SC3 mapped soils: Plainfield sand
 Elevation: 156.2m. (477ft.)
 Cored by: David S. Leigh and Julie E. Clifton, 12-1-83
 Described by: Edwin R. Haines, 7-10-84

302- 324 11C1b2
 (120-128)
 324- 480 11C2b2
 (128-189)
 480- 550 OL
 (189-217)

dark yellowish brown (10YR3/4) fine sand, clay loam, noneffervescent, indeterminate boundary.
 dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/4) fine sand, noneffervescent, indeterminate boundary.
 dark yellowish brown (10YR3/4) and dark brown (10YR3/3) fine sand, noneffervescent, approximately upper one half of unit has very low silt fraction, indeterminate boundary.

Depth, cm Soil Horizon (in.) or zone Description Unified Soil Classification

0- 11 C1 very dark brown (10YR2/2) pebbly loam, sand, single grain, loose, violently effervescent, many fine roots, road seal, abrupt boundary. SP

11- 32 A1b very dark brown (10YR2/2) loam, fine sand, very weak fine granular, very friable, noneffervescent, abrupt boundary. SP

32- 80 C1b dark yellowish brown (10YR3/6) fine sand, single grain, loose, noneffervescent, gradual boundary. SP

80- 120 C2b dark yellowish brown (10YR4/6) fine sand, single grain, loose, noneffervescent, gradual boundary. SP

120- 214 C3b dark yellowish brown (10YR3/6) fine sand, single grain, loose, noneffervescent, small amount of silt in lower 25cm., abrupt boundary. SP

214- 239 11A1b- very dark brown (10YR2/2) fine sand, loam, weak fine subangular blocky, firm, noneffervescent, clay, boundary. SP

239- 257 11A2b2 brown (10YR 3) fine sand, loam, with many fine dark yellowish brown (10YR3/4) and dark brown (7.5YR4/4) Fe mottles, moderate medium plates, friable, noneffervescent, few fine manganese mottles and very fine Fe nodules, plate structure probably due to original lamination, clear boundary. SP

257- 270 11B1b2 dark yellowish brown (10YR3/4) to dark yellowish brown (10YR4/4) fine sand, loam, with many medium dark yellowish brown (10YR3/4) and dark brown (7.5YR3/4) Fe mottles, weak medium subangular blocky, friable, noneffervescent, very few Fe nodules, clear boundary. SP

270- 292 11B2b2 dark yellowish brown (10YR3/4) fine sand, loam, moderate coarse prismatic, friable, noneffervescent, continuous dark yellowish brown (10YR4/4) coats on ped faces, more clay than upper B horizon, clear boundary. SP

292- 306+11B3b2 dark yellowish brown (10YR 4) fine sand, clay loam, moderate medium, subangular blocky, friable, noneffervescent, common dark yellowish brown (10YR3/4) coats on ped faces, more clay than above, reticular. CL

Master core number: 551

Location: NW1/4, NE1/4, Sec. 26, T. 10N, R. 13W, Cass Co., 16 ft. south of Honey Point road and approximately 1/2 mile east of DLC-15

Landscape position: footslope of Bath (?) Terrace scarp

Surface at 10 ft. level: none

SES mapped soil: Plainfield sand

Elevation: 134.7m (442ft.)

Cored by: David S. Leish and Julia E. Clifton, 12-1-83

Graded by: Edwin R. Harlow, 7-10-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-39 A1 (0-15)	very dark brown (10YR2/2) loam, fine sand, very weak fine plate, very friable, noneffervescent, clear bound.	SF
39-114 C (15-45)	dark yellowish brown (10YR3/4) fine sand, single grain, looser, noneffervescent, abrupt boundary.	SP
114-135 11B1b (45-50)	dark yellowish brown (10YR3/4) fine sand, loam, moderate medium subangular blocky, friable, noneffervescent, few dark yellowish brown (10YR4/4) thin coats on ped faces, clear boundary.	SF
135-150 11B2b (50-61)	dark yellowish brown (10YR3/4) fine sand, loam, moderate coarse prismatic, friable, noneffervescent, many dark yellowish brown (10YR4/4) coats on ped faces, more clay than above, clear boundary.	SP
150-193 11B3b (61-76)	dark yellowish brown (10YR3/6) fine sand, loam, moderate coarse subangular blocky, friable, noneffervescent, common dark yellowish brown (10YR4/4) thin coats on ped faces, clay contents similar to 11B2b, clear boundary.	SP
193-243 11B1b (76-93)	brown to dark brown (10YR4/3) and brown (10YR5/3) and dark yellowish brown (10YR3/6) loam, fine sand and fine sand, loam, weak medium subangular blocky, friable, noneffervescent, original, stratified unit, clear boundary.	SF
243-280 10C2b(0L) (93-110)	light yellowish brown (2.5Y6/4) fine sand, indeterminate boundary.	SF
280-510 0L (110-261)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR4/4) fine sand, noneffervescent, indeterminate boundary.	SP
510-700+0L (261-275)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR4/4) poor, sorted fine to coarse sand, (refusal).	SW

DLC-17

Master core number: 552

Location: NW1/4, NE1/4, Sec. 30, T. 17N, R. 12W, Cass County, Landscape position: Indian Creek floodplain in Illinois valley

SES mapped soil: Sawnill silt, clay, loam

Elevation: 135.3m (444ft.)

Cored by: DSL, JEC

Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0-120 S0LUM (0-47)	silt loam to fine sand, loam at base, gradual boundary.	ML
120-298 MDL (47-117)	grayish brown (2.5Y5/2) fine sand and light brownish gray (2.5Y6/2) silt, stratified with 5-10cm thick alternating beds of silt and sand, silts are laminated, silts with common medium light olive brown (2.5Y5/6) mottles, noneffervescent, clear boundary.	ML
298-580 DL (117-228)	light brownish gray (2.5Y6/2) to light yellowish brown (2.5Y6/4) medium sand, single grain, noneffervescent, indeterminate boundary.	SF
580-625 UL (228-246)	dark gray (5Y4/1) pebbly sandy loam, very poor, sorted, noneffervescent, indeterminate boundary.	SW
625-780 UU (246-307)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
780-840+UU (307-331)	olive (5Y5/3) coarse, very coarse sand and pebbles, very slightly effervescent, refusal.	SW

DLC-18

Master core number: 553
 Location: NE, SE, NW, Sec. 30, T17N, R12W, Cass County
 Landscape position: Indian Creek floodplain in Illinois valley
 SCS mapped soil: Conifer, clay loam
 Elevation: 135.3m (444ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 70 SPOIL (0- 28)	clear boundary	CL
70- 183 SOLUM (28- 72)	clay loam to sandy clay loam at base, clear boundary.	CL
183- 210 BC (72- 83)	grayish brown (10YR5/2) sandy loam, with common medium dark yellowish brown (10YR4/6) mottles, moderate medium subangular blocks, noneffervescent, clear boundary.	ML
210- 510 C(DL) (83-201)	light olive brown (2.5Y5/4) to yellowish brown (10YR5/8) fine sand, single grain, noneffervescent, indeterminate boundary.	SP
510- 570 UL (201-224)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) fine sand to medium sand, single grain noneffervescent, indeterminate boundary.	SP
570- 585 UL (224-230)	dark gray (5Y4/1) fine sandy loam, noneffervescent, indeterminate boundary.	SP
585- 610 DL (230-240)	light olive brown (2.5Y5/4) fine to medium sand, single grain, noneffervescent, indeterminate boundary.	SP
610- 790 O/DL (240-311)	light yellowish brown (2.5Y6/4) fine to medium sand, single grain, noneffervescent, indeterminate boundary.	JS
790- 870 UU (311-343)	grayish brown (2.5Y5/2) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
870- 920 UU (343-362)	grayish brown (2.5Y5/2) coarse, very coarse sand and pebbles, slightly effervescent, indeterminate boundary.	SW
920- 930+U/DU (362-366)	light olive brown (2.5Y5/4) to light yellowish brown (2.5Y6/4) coarse, very coarse sand and pebbles, very slightly effervescent, refusal.	SW

DLC-19

Master core number: 554
 Location: NE, NW, SE, Sec. 29, T17N, R12W, Cass County
 Landscape position: Indian Creek floodplain in Illinois valley
 SCS mapped soil: Sparta loam, sand
 Elevation: 136.6m (448ft.)
 Cored by: DSL, JEC
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 165 SOLUM (0- 65)	silt to sand, silt loam at base, clear boundary	ML
165- 203 BC (65- 80)	light olive brown (2.5Y5/4) sand/loam, with common medium light olive brown (2.5Y5/6) mottles, moderate coarse subangular blocks, noneffervescent, clear boundary.	SP
203- 300 C(DL) (80-118)	light olive brown (2.5Y5/6) to olive yellow (2.5Y6/6) fine sand, single grain, noneffervescent, indeterminate boundary.	SP
300- 480 O/DL (118-189)	light olive brown (2.5Y5/4) medium sand, noneffervescent, indeterminate boundary.	SP
480- 600 D/UL (189-236)	light brownish gray (2.5Y6/2) coarse, very coarse sand, single grain, noneffervescent, very few pebbles, indeterminate boundary.	SW
600- 760+D/UU (236-299)	olive brown (2.5Y4/4) coarse and very coarse sand, single grain, strongly effervescent, refusal.	SW

DLC-20

Master core number: 555
 Location: NE, NE, NE, Sec. 36, T17N, R13W, Cass Co., 30ft. west of 90 degree turn
 in drainage ditch and 10ft. south of Honey Point rd.
 Landscape position: local floodplain of Indian Creek paleochannel
 Surface archeology: historic archeology noted
 SCS mapped soil: Beardstown loam
 Elevation: 133.5m. (438ft.)
 Cored by: David S. Leigh and Julia E. Clifton, 12-5-83
 Described by: Edwin R. Hajic, 8-12-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 20 C (0- 8)	ditch soil, very abrupt boundary	ML
20- 48 A1 (8- 19)	very dark brown (10YR2/2) loam, weak fine granular, friable, noneffervescent, abrupt boundary.	ML
48- 79 B1 (19- 31)	dark gray (10YR4.5/1) loam to clay loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	ML
79- 129 B2t (31- 51)	grayish brown (2.5Y5/2) heavy loam, continuous dark yellowish brown (10YR4/6) Fe mottles, weak medium prismatic, friable, noneffervescent, continuous grayish brown (10YR5/2) clay coats on ped faces and in pores, clear boundary.	ML
129- 151 B3 (51- 59)	grayish brown (2.5Y5/2) fine sandy loam, with many fine dark yellowish brown (10YR4/6) Fe mottles and with common medium dark grayish brown (2.5Y4/2) mottles, weak coarse subangular blocky, friable, noneffervescent, few Fe nodules, clear boundary.	SP
151- 180 C(DL) (59- 71)	olive brown (2.5Y4/3) loamy fine sand, noneffervescent, gradual boundary.	SP
180- 480+DL (71-189)	olive brown (2.5Y4.5/3) fine sand, noneffervescent, one clay lamination at 410cm., refusal.	SP

DLC-21

Master core number: 556
 Location: SE 1/4, Sec. 25, T17N, R13W, Cass Co., in the field corner of the intersection of Honey Point rd. and Indian Creek rd.
 Landscape position: local floodplain of Indian Creek paleochannel
 Surface archeology: none
 SCS mapped soil: Raddle silt loam
 Elevation: 134.1m. (440ft.)
 Cored by: David S. Leish and Julia E. Clifton, 12-5-83
 Described by: Edwin R. Hajic, 8-12-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 34 Ap (0- 13)	black (10YR2/1) silt loam, weak very fine granular, friable, noneffervescent, abrupt boundary.	ML
34- 61 A1 (13- 24)	very dark brown (10YR2/2) silt loam, weak fine granular, very friable, noneffervescent, clear boundary.	ML
61- 80 A2ORB1 (24- 31)	grayish brown (10YR5/2) silt loam, weak fine subangular blocky, very friable, noneffervescent, common fine very dark brown (10YR2/2) concretions (?), abrupt boundary.	ML
80- 146 B2 (31- 57)	brown to dark brown (10YR4/3) silt loam, weak medium prismatic, friable, noneffervescent, patchy very dark grayish brown (10YR3/2) and very dark brown (10YR2/2) clay coats on ped faces and pores and fine concretions, gradual boundary.	ML
146- 207 B3t (57- 81)	brown to dark brown (10YR4/3) silt loam, with many fine dark yellowish brown (10YR4/6) and dark yellowish brown (10YR3/6) Fe mottles, weak coarse prismatic, friable, noneffervescent, many thick very dark grayish brown (10YR3/2) and very dark brown (10YR2/2) clay coats on ped faces and pores, clear boundary.	ML
207- 270 C (MOL) (81-106)	grayish brown (10YR5/2) silt loam high in sand content, with many fine dark yellowish brown (10YR4/6) and dark yellowish brown (10YR3/6) Fe mottles, noneffervescent, weakly stratified, indeterminate boundary.	ML
270- 470 O/DL (106-185)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR4/4) and dark yellowish brown (10YR4/6) fine and medium sand, stratified with common grayish brown (10YR5/2) and (2.5Y5/2) silt and coarse silt thickly laminated, noneffervescent, indeterminate boundary.	SP
470- 640 DU (185-252)	dark grayish brown (10YR4/2) medium sand, few very fine pebbles, slightly to strongly effervescent, indeterminate boundary.	SP
640- 700 DU (252-276)	dark grayish brown (10YR4/2) medium sand, fair sorting, common very fine and fine pebbles, violently effervescent, indeterminate boundary.	SP

700- 720+DU
(276-283)

dark yellowish brown (10YR3/4) medium sand, fair sorting, common very fine and fine pebbles, violently effervescent, refusal.

SP

DLC-22

Master core number: 557
 Location: NW 1/4, Sec. 31, T17N, R13W, Cass Co., in the field corner of the intersection of Honey Point rd. and Hwy. 100
 Landscape position: Bluffs Terrace
 Surface archeology: none
 SCS mapped soil: Mateska loam sand
 Elevation: 134.4m. (441ft.)
 Cored by: David S. Leish and Julia E. Clifton, 12-8-84
 Described by: Edwin R. Hajic, 8-12-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 204 OL (0- 80)	pale brown (10YR6/3) loam, fine sand to fine sand, with common medium dark yellowish brown (10YR4/6) mottles, weak subangular blocky to single grain loose, noneffervescent, clear boundary.	SP
204- 378 OL (80-149)	dark yellowish brown (10YR4/4) and dark yellowish brown (10YR3/4) fine sand (with some silt), noneffervescent, rare very fine pebbles, one small piece of charcoal, abrupt boundary.	SP
378- 510 DU (149-201)	light olive brown (2.5Y5/4) fine sand, strong to violently effervescent, clear boundary.	SP
510- 630 DU (201-248)	light olive brown (2.5Y5/3) medium silt, moderate sorting, common very fine pebbles, strong to violently effervescent, clear boundary.	SP
630- 720+DU (248-283)	light olive brown (2.5Y5/4) medium and coarse sand, poorly sorted, common very fine to medium pebbles, slightly to strongly effervescent, one piece of charcoal, refusal.	SP

DLC-23

Master core number: 558

Location: NE, NE, Sec. 1, T16N, R13W, Morgan County

Landscape position: Bluffs terrace (?)

SCS mapped soil: Matseia loam, sand

Elevation: 134.7m (442ft.)

Cored by: DSL, JEC

Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 104 SOLUM (0- 41)	fine sandy loam, clear boundary	SP
104- 167 C (MOL) (41- 66)	stratified grayish brown (10YR5/2) sandy clay loam, with many medium dark yellowish brown (10YR4/6) mottles, and 2.5Y6/3 medium sandy clay loam has weak, coarse subangular blocky structure, nonferrous, two sands, clay loam strata, and two medium sand strata, each strata 10-15cm, thick, sandy clay loam at top, clear boundary.	SP
167- 210 OL (66- 83)	olive brown (2.5Y4/4) loamy sand, with common large dark yellowish brown (10YR4/4) mottles, weak very coarse subangular blocky, nonferrous, base of zone marked by pebble lens, abrupt boundary.	SP
210- 400 DL (83-157)	grayish brown (2.5Y5/2) medium sand, single grain, nonferrous, indeterminate boundary.	SP
400- 480+D/UL (157-189)	dark grayish brown (2.5Y4/2) coarse, very coarse sand, and pebbles, nonferrous, numerous pebbles greater than 1.0cm. B diam., refusal.	SW

Master core number: 559

Location: NW, NW, Sec. 19, T17N, R12W, Cass Co., 120ft. east of fence line atop

terrace scarp on C. Windleman's field road

Landscape position: local bottoms just east of bluffs (?) Terrace scarp

Surface archeology: none

SCS mapped soil: Deforia silt, clay

Elevation: 132.3m (434ft.)

Cored by: David S. Leish and Julia L. Clifton, 12-8-83

Described by: Edwin R. Hajicek, 7-8-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 13 C1 (0- 5)	very dark grayish brown (10YR3/2) and dark brown (10YR3/3) loamy fine sand, very weak medium granular, very friable, nonferrous, soil, very abrupt boundary.	SF
13- 40 Afb (5- 16)	very dark brown (10YR2/2) silt loam, and with high sand content, moderate fine granular, friable, nonferrous, very abrupt boundary.	ML
40- 59 A3b (16- 25)	black (10YR2/1) silt, clay loam, moderate fine subangular blocky, friable, nonferrous, clear boundary.	CL
59- 85 B2bs (23- 33)	very dark gray (10YR3/1) silt, clay, moderate medium prismatic, firm, nonferrous, gradual boundary.	CL
85- 139 B22bs (33- 55)	dark grayish brown (2.5Y4/2) silt, clay, with few fine dark yellowish brown (10YR3/6) Fe mottles, weak medium prismatic breaking to weak medium angular blocky, firm, nonferrous, common very dark gray (10YR3/1) coats on red faces and pores, two very dark gray (10YR3/1) silt, clay, krotovina, gradual boundary.	CL
139- 195 B3bs (55- 77)	olive gray (5Y5/2) silt, clay loam, with many fine dark yellowish brown (10YR3/6) Fe mottles, weak coarse subangular blocky, firm, nonferrous, common very dark gray (10YR3/1) and (10YR4/1) coats on red faces and pores, few fine and medium roots, indeterminate boundary.	CL
195- 247 IIC(UL) (77- 97)	olive gray (5Y5/2) silt with thin veds and thick laminae of dark olive gray (5Y3/2) and olive gray (5Y4/2) fine sand, nonferrous, sand zone at 202-208 has subangular to subrounded lenticular and chert pebbles, this zone may actually represent top of unit, very abrupt boundary.	ML
247- 259 UL (97-102)	dark grayish brown (2.5Y4/2) and dark olive gray (5Y3/2) fine sand, nonferrous, indeterminate boundary.	SF
259- 460 UL (102-181)	dark grayish brown (2.5Y4/2) medium and coarse sand, no recovery, indeterminate boundary.	SF
460- 480+OU (181-189)	dark yellowish brown (10YR4/4) fine and medium sand, strongly effervescent, refusal.	SF

DLC-25

Master core number: 560
Location: SE, SE, NE, Sec. 24, T17N, R13W, Cass Co., 25ft. northwest of last fence post on north-south fence line on field road
Landscape position: eastern most edge of Bluffs Terrace remnant
Surface archeology: none (snow cover)
SCS mapped soil: Dickenson fine sand, loam
Elevation: 134.7m. (442ft.)
Cored by: David S. Leigh and Julia E. Clifton, 12-8-84
Described by: Edwin R. Hajic, 7-8-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 27 C1 (0- 11)	ver. dark brown (10YR2/2) silt loam, high in very fine sand content, weak, stratified, strata are massive, friable, noneffervescent, soil, abrupt boundary.	ML
27- 47 A1b (11- 19)	very dark brown (10YR2/2) silt loam, weak fine granular, ver. friable, noneffervescent, clear boundary.	ML
47- 75 B1b (19- 30)	dark brown (10YR3/3) silt loam, weak medium subangular blocks, ver. friable, noneffervescent, gradual boundary.	ML
75- 107 B2b (30- 42)	dark yellowish brown (10YR3/4) silt loam, moderate medium subangular blocks, friable, noneffervescent, few fine sand coats on ped faces and in pores, gradual boundary.	ML
107- 123 B3b (42- 48)	dark yellowish brown (10YR3/6) fine sandy loam, weak medium subangular blocks, very friable, noneffervescent, clear boundary.	SP
123- 146 11C1b(OL) (48- 57)	dark yellowish brown (10YR4/6) very fine and fine sand, single grain, loose, noneffervescent, abrupt boundary.	SP
146- 240 OL (57- 94)	yellowish brown (10YR5/6) very fine and fine sand, noneffervescent, indeterminate boundary.	SP
240- 360 OL (94-142)	dark yellowish brown (10YR4/6) fine sand, noneffervescent, indeterminate boundary.	SP
360- 600 OU (142-236)	dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/6) fine sand and medium sand, slightly to strongly effervescent, common grayish brown (2.5Y5/2) thick silt laminae, indeterminate boundary.	SP
600- 720+OU (236-283)	yellowish brown (10YR5/4) and dark yellowish brown (10YR4/4) fine sand and medium sand, slightly effervescent, refusal.	SP

100-20

Master site number: Soil
Location: SW, SE, NE, Sec. 24, T17N, R13W, Cass Co., 425 ft. east of Indian Creek
rd. on C. Winkelman's field road
Landscape position: local low area on Bluffs Terrace remnant
Surface archeology: none, snow cover
Soil mapped soil: Littleton silt loam
Elevation: 133.2m. (437 ft.)
Cored by: David S. Leigh and Julia E. Clifton, 12-8-83
Described by: Edwin R. Maciej, 7-8-84

Depth (cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 25 A1 (0- 11)	black (10YR2/1) silt loam, very few fine dark yellowish brown (10YR3/6) Fe mottles, moderate fine granular, friable, nonferrescent, few fine sandy pockets, clear boundary.	ML
25- 56 B1 (11- 22)	dark grayish brown (10YR4/2) silt loam, moderate medium subangular blocky, friable, nonferrescent, common black (10YR2/1) thin coats on ped faces, few black (10YR2/1) silt loam protrusions, clear boundary.	ML
56- 75 B2t (22- 30)	dark grayish brown (10YR4/2) silt loam, with very few fine dark yellowish brown (10YR3/6) Fe mottles, moderate medium prismatic, breaking to moderate medium subangular blocky, friable, nonferrescent, one brown chert, subangular gravel, few thin very dark grayish brown (10YR3/2) coats on ped faces, discontinuous fine sand on ped faces, clear boundary.	ML
75- 132 B2bt (30- 52)	dark gray (10YR4/1) silt loam, with many fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR3/4) Fe mottles and with few fine dark grayish brown (10YR4/2) mottles, moderate medium and coarse prismatic, friable, nonferrescent, continuous dark grayish brown (10YR4/2) thin coats on ped faces and in pores, discontinuous fine sand on ped faces and in pores, indeterminant boundary.	ML
132- 160 B3 (52- 65)	mottled dark grayish brown (10YR4/2) and dark yellowish brown (10YR3/4) heavy silt loam, with many fine dark yellowish brown (10YR3/6) Fe and Mn mottles, weak medium subangular blocky, friable, nonferrescent, continuous dark gray (10YR4/1) thin coats in pores, clear boundary.	ML
160- 209 11C (OL) (63- 82)	dark yellowish brown (10YR3/4) loam to loamy fine sand at base, weakly laminated in lower half, weak medium subangular blocky, friable to very friable, nonferrescent, very abrupt boundary.	SP
209- 230 OL (82- 91)	olive brown (2.5Y4/4) fine sand, brown to dark brown (7.5YR4/4) loam, fine sand, grayish brown (2.5Y5/2) and brown to dark brown (7.5YR4/4) silt, strongly laminated, friable, nonferrescent, very abrupt boundary.	SP

230- 240 OL
(91- 94)
dark yellowish brown (10YR4/6) fine sand and
medium sand, nonferrescent, abrupt boundary.

240- 410 OL
(94-161)
dark yellowish brown (10YR3/4) to olive brown
(2.5Y4/4) fine sand and medium sand, very few
grayish brown (2.5Y5/2) silt laminae, one piece
of wood at about 275cm., possibly contamination
from pounding board?, indeterminant boundary.

410- 530 DU
(161-209)
grayish brown (2.5Y5/2) to olive brown (2.5Y4/4)
fine sand, slightly effervescent, indeterminant
boundary.

530- 600+DU
(209-236)
dark yellowish brown (10YR3/4) and dark yellowish
brown (10YR3/6) fine sand, slightly effervescent,
refusal.

DLC-27

Master core number: 562
 Location: SE, SE, NE, Sec. 12, T17N-R13W, Cass Co., midwa, between DLC-25 and DLC-26 on Bluffs Terrace remnant
 Landscape position: Bluffs Terrace
 Surface archeology: none, snow covered
 SCS mapped soil: Ruddle silt loam
 Elevation: 131.4m. (440ft.)
 Cored by: David S. Leigh and Julia E. Clifton, 12-9-83
 Described by: Edwin R. Haisic, 7-8-84

269- 368 U/DL
 (106-145)
 dark yellowish brown (10YR3/4) and dark yellowish brown (10YR3/6) fine to medium sand, fine sand, loam stratified and strongly laminated, noneffervescent, very abrupt boundary.
 SP

368- 420 DU
 (145-165)
 olive brown (2.5Y4/4) fine sand, very few grayish brown (2.5Y5/2) silt laminae and one dark grayish brown (2.5Y4/2) silt laminae at base, very slightly effervescent, abrupt boundary.
 SP

420- 540 DU
 (165-213)
 dark yellowish brown (10YR3/6) fine sand, very slightly effervescent, indeterminate boundary.
 SP

540- 700+?
 (213-276)
 fine sand and and medium sand with few gravels, no recovery, refusal.
 SP

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
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0- 39 A1 (0- 15)	very dark brown (10YR2/2) silt loam, weak fine granular, friable, noneffervescent, silt loam is relatively sandy, gradual boundary.	ML
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39- 76 B1 (15- 30)	very dark grayish brown (10YR3/2) silt loam, moderate fine subangular blocky, friable, noneffervescent, continuous very dark brown (10YR2/2) thin coats on ped faces, rare charcoal mottles, gradual boundary.	ML
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76- 121 B22 (30- 48)	dark brown (10YR3/3) silt loam, with many fine dark yellowish brown (10YR3/6) mottles, moderate medium, prismatic, friable, noneffervescent, common very dark grayish brown (10YR3/2) thin coats on ped faces, clear boundary.	ML
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121- 136 B23 (48- 54)	dark yellowish brown (10YR3/4) silt loam, silt loam is high in fine sand, with many fine dark yellowish brown (10YR3/6) mottles, weak medium prismatic, friable, noneffervescent, clear boundary.	ML
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136- 158 IIB3 (54- 62)	dark yellowish brown (10YR4/4) sandy loam, with med. medium and fine dark yellowish brown (10YR3/6) Fe mottles, weak medium subangular blocky, very friable, noneffervescent, abrupt boundary.	SP
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158- 242 IIIC1 (62- 95)	dark yellowish brown (10YR4/4) silt loam, silt loam is high in fine sand, with many medium grayish brown (2.5Y5/2) and dark yellowish brown (10YR3/6) Fe mottles, massive, very friable, noneffervescent, abrupt boundary.	ML
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242- 269 IVC2(OL) (95-106)	dark yellowish brown (10YR3/6) and dark yellowish brown (10YR3/4) dark yellowish brown (10YR4/6) stratified medium sand and loam, fine sand, few laminae of dark yellowish brown (10YR4/6) medium sand and grayish brown (2.5Y5/2) loam, fine sand, noneffervescent, very abrupt boundary.	SP
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Master core number: 563

Location: SW 1/4 Sec. 24, T17N, R13W, Cass Co., 16ft. south of southwest corner of C. Winklemans hog finishing shed at northeast corner of intersection of Indian Creek rd. and Winklemans field road

Landscape position: dune on Bath Terrace remnant

Surface archeology: none

Soils mapped: soil: Dickenson fine sandy loam to Plainfield loam, sand

Elevation: 135.0m. (443ft.)

Cored by: David S. Leish and Julia E. Slifton, 12-9-83

Described by: Edwin R. Helle, 7-5-84

Depth cm Soil Horizon (in.) or Zone		Description	Unified Soil Classification
0- 22 C1 (0- 9)		dark yellowish brown (10YR3/4) loamy fine sand, weak medium plate, friable, noneffervescent, very abrupt boundary.	SP
22- 46 A1b1 (9- 18)		very dark grayish brown (10YR2/2) loam, fine sand, very weak fine granular, very friable, noneffervescent, clear boundary.	SP
46- 98 C1b1 (18- 39)		dark yellowish brown (10YR3.5/6) fine sand, single grains, loose, noneffervescent, discontinuous dark brown (10YR3/3) fine sand at 84-91cm., clear boundary.	SP
98- 123 C2b1 (39- 48)		dark yellowish brown (10YR4/6) fine sand to loam, fine sand, with common fine strong brown (7.5YR3/6) Fe mottles, massive, noneffervescent, abrupt boundary.	SP
123- 155 B21b2 (48- 61)		grayish brown (10YR5/2) loam to clay loam, at base, with common fine brown to dark brown (7.5YR4/4) and with many medium very dark grayish brown (10YR3/2) and with common fine dark yellowish brown (10YR3/6) Fe mottles, weak medium subangular blocks, firm, noneffervescent, clear boundary.	CL
155- 168 B22b2 (61- 66)		brown to dark brown (7.5YR4/2) clay loam, with many fine dark yellowish brown (10YR3/6) and with common fine brown (7.5YR5/2) and brown to dark brown (7.5YR4/4) mottles, few manganese mottles, moderate medium subangular blocks, firm, noneffervescent, gradual boundary.	CL
168- 199 B23b2 (66- 78)		brown to dark brown (7.5YR4/4) clay loam, with many fine brown (7.5YR5/2) and yellowish brown (10YR5/6) and dark yellowish brown (10YR3/6) Fe mottles, few manganese mottles, moderate medium columnar to subangular blocky at base, firm, noneffervescent, boundary, clearly marked by laminated heavily oxidized corrosion zone, very abrupt boundary.	CL

199- 224 C1b2
(78- 88)

olive brown (2.5YR4/4) fine sand, dark brown (7.5YR4/4) loam, fine sand, and mottled dark brown (7.5YR4/4) and dark yellowish brown (10YR4/4) loam, stratified and laminated, friable to firm, noneffervescent, boundary marked by heavy, oxidized corrosion zone, very abrupt boundary.

224- 240 B3b3
(88- 94)

olive brown (2.5YR4/4) fine sand, loam, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak medium subangular blocks, firm, noneffervescent, many very fine and fine pores, clear boundary.

240- 280 C1b3
(94-110)

dark yellowish brown (10YR4/6) to brown to dark brown (7.5YR4/4) at base, loamy fine sand, few weak laminae, single grain to massive loose to friable noneffervescent, more clay at base, very abrupt boundary.

280- 418 U/DL
(110-165)

brown to dark brown (7.5YR4/2) silt and coarse silt, grayish brown (2.5Y5/2) silt and coarse silt, dark yellowish brown (10YR3/4, 3/6 and 4/6) fine sand loamy fine sand and fine sand, loam, stratified and strong, laminated, noneffervescent, one reddish brown (5YR4/4) clay laminae, very abrupt boundary.

418- 520 OL
(165-205)

dark yellowish brown (10YR3/5) fine sand, noneffervescent, one subrounded sedimentary pebble, indeterminate boundary.

520- 620 OU
(205-244)

dark yellowish brown (10YR3/4) fine sand, slightly effervescent, indeterminate boundary.

620- 720+OU
(244-283)

fine sand to medium and coarse sand, with pea sized pebbles at base, strong, effervescent, some loamy sediment between 640 and 660cm., refusal.

DLG-29

Master core number: 524
 Location: NE, NW, SE, Sec. 24, T17N, R13W, Cass Co., approximately 660ft. west of
 DLG-28 between Indian Creek rd and Winklemans house
 Landscape position: depression between dunes on Bath Terrace remnant
 Surface archeological note
 SCS mapped soil: Gray loam
 Elevation: 133.8m. (439ft.)
 Cored by David S. Leish and Julia E. Clifton, 12-9-83
 Described by Edwin R. Healy, 7-7-84

205- 520 OL
 (81-205)

dark yellowish brown (10YR3/6) to dark yellowish
 brown (10YR3/4) loamy fine sand to fine and
 medium sand with few pebbles, one laminae of grayish
 brown (2.5Y5/2) silt at approx. 1m (270cm.),
 several strong brown (7.5YR4/4) laminae between
 480-500cm., noneffervescent, indeterminate
 boundary.

olive brown (2.5Y4/4) fine sand and medium sand,
 mottles, slightly effervescent, few pea sized
 igneous and quartz pebbles, indeterminate
 boundary.

520- 600 OU
 (205-236)

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 8 A11 (0- 3)	black (10YR2/1) loam, weak fine granular, very friable, strongly effervescent, carbonates probably from road dust, common fine roots, clear boundary.	ML
8- 21 A12 (3- 8)	very dark brown (10YR2/2) fine sand, loam, weak fine granular, very friable, noneffervescent, clear boundary.	SF
21- 46 A2 (8- 18)	dark grayish brown (10YR4/2) fine sand, loam, with common fine dark yellowish brown (10YR3/6) mottles, very weak medium platy, to weak medium subangular blocky, friable, noneffervescent, abrupt boundary.	SF
46- 72 B21 (18- 28)	dark yellowish brown (10YR4/4) fine sand, loam, moderate medium subangular blocky, friable, noneffervescent, very high porosity, clear boundary.	SF
72- 107 B22 (28- 42)	yellowish brown (10YR5/4) heavy, loam, moderate medium subangular blocky, firm, noneffervescent, clear boundary.	ML
107- 133 B3 (42- 52)	dark yellowish brown (10YR4/4) heavy loam, with few large dark yellowish brown (10YR3/4) mottles, moderate coarse subangular blocky, noneffervescent, very abrupt boundary.	ML
133- 151 I1C1 (52- 54)	olive brown (2.5Y4.5/4) fine sand and medium sand, single grain, loose, noneffervescent, abrupt boundary.	SF
151- 169 I11C2(OL) (59- 67)	brown to dark brown (7.5YR4/4) and dark yellowish brown (10YR3.5/4) clay loam and loam, weak thick laminae, noneffervescent, abrupt boundary.	CL
169- 205 OL (67- 81)	brown (10YR5/3) and dark, yellowish brown (10YR3/4) and dark yellowish brown (10Y4/6) silt loam, silty clay loam, loam, fine sand, fine sand, stratified and laminated, noneffervescent, few manganese mottles, abrupt boundary.	CL

Master core number: 565

Location: SW 3/4, Sec. 24, T17N, R13W, Cass Co., west of fork in C. Winkelman's

driveaway midway between first two large oak trees

Landscape position: Dune on Bath (?) Terrace remnant

Surface archeology: none

SCS mapped soil: Plainfield loam, sand

Elevation: 135.9m. (446ft.)

Cored by: David S. Leish and Julia E. Clifton, 12-9-83

Described by: Edwin R. Haug, 7-7-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 11 A11 (0- 4)	very dark brown (10YR2/2) loam, fine sand, weak medium granular, very friable, noneffervescent, abundant fine roots, few medium roots, clear boundary.	SP
11- 21 A22 (4- 8)	dark brown (10YR3/3) loam, fine sand, very weak medium granular, very friable, noneffervescent, abundant fine roots, clear boundary.	SP
21- 48 B2 (8- 19)	dark yellowish brown (10YR3/6) fine sand, single grain, loose, noneffervescent, few fine roots, gradual boundary.	SP
48- 133 C1 (19- 52)	dark yellowish brown (10YR4/6) fine sand, single grain, loose, noneffervescent, clear boundary.	SP
133- 149 A1b1 (52- 59)	dark yellowish brown (10YR4/4) fine sand, single grain, loose, noneffervescent, few fine roots, clear boundary.	SP
149- 154 B2b1 (59- 61)	dark yellowish brown (10YR3/4) loam, fine sand, weak medium subangular blocky, friable, noneffervescent, clear boundary.	SP
154- 162 C11 (61- 64)	dark yellowish brown (10YR4/4) fine sand, single grain, loose, noneffervescent, clear boundary.	SP
162- 204 A1b2 (64- 80)	dark brown (10YR3/3) fine sand, loam, weak fine subangular blocky, friable, noneffervescent, common uncarbonized organic matter, clear boundary.	SP
204- 318 B2b2 (80-125)	dark yellowish brown (10YR3/6) and dark yellowish brown (10YR3/4) loam, moderate medium subangular blocky, firm, noneffervescent, few fine roots, gradual boundary.	ML
318- 420 C12 (125-165)	dark yellowish brown (10YR3/6) and dark yellowish brown (10YR3/4) and yellowish brown (10YR5/6) loam, fine sand and fine sand, friable to single grain loose, noneffervescent, probably originally stratified, clear boundary.	SP
420- 684 OL (165-269)	dark yellowish brown (10YR4/4) fine sand to medium sand, noneffervescent, gradual boundary.	SP
684- 840+OU (269-331)	brown to dark brown (10YR4/3) medium to coarse pebbles, slightly effervescent, pebbles are igneous and quartz, subrounded to subangular, refusal.	SW

DLC-31

Master core numbers 566
 Location: NW 1/4, Sec. 18, T17N, R12W, Cass Co., 30 ft. south of Indian Creek
 rd. and 120 ft. east of M. Winkelman's driveway
 Landscape position: on Bluffs Terrace near eastern scarp
 Surface archeology: few flakes, probably part of the Marlin Winkelman site
 SCS mapped soil: Alvin fine sand, loam
 Elevation 136.4m. (441 ft.)
 Cored by David S. Leish and Julia E. Clifton, 12-12-83
 Described by Edwin R. Hais, 7-20-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 23 A1 (0- 9)	very dark grayish brown (10YR3/2) very fine sand, loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	SP
23- 34 A2 (9- 13)	dark grayish brown (10YR4/2) very fine sand, loam, weak medium subangular blocky, friable, noneffervescent, abrupt boundary.	SP
34- 60 B1 (13- 24)	dark yellowish brown (10YR4/4) light loam, weak medium subangular blocky, friable, noneffervescent, clear boundary.	ML
60- 76 B2t (24- 30)	brown to dark brown (7.5YR4/4) loam, moderate medium subangular blocky, friable, noneffervescent, common thin dark brown (7.5YR3/4) clay coats on ped faces, clear boundary.	ML
76- 105 B2t (30- 41)	brown to dark brown (7.5YR4/4) heavy loam, moderate medium and coarse subangular blocky, firm, noneffervescent, common thin dark brown (7.5YR3/4) clay coats on ped faces, clear boundary.	ML
105- 146 11B31 (41- 57)	dark yellowish brown (10YR4/6) loam, very fine sand, very weak coarse subangular blocky, very friable, noneffervescent, clear boundary.	ML
146- 165 111B32 (57- 65)	brown to dark brown (7.5YR4/4) loam, weak coarse subangular blocky, friable, noneffervescent, clear boundary.	ML
165- 217 1VC(OL) (65- 85)	dark yellowish brown (10YR4/4) and dark brown (7.5YR3/4) loam and very fine sand, loam, stratified, noneffervescent, clear boundary.	ML
217- 240 OL (85- 94)	yellowish brown (10YR5/6) fine sand, single grain, loose, noneffervescent, very abrupt boundary.	SP
240- 332 DU (94-131)	olive (5Y5/3) and brown to dark brown (7.5YR4/2) and (7.5YR5/2) silt, weak, laminated, very slightly effervescent, few oxidized very fine sand laminae, last 5cm. has heavy, oxidized strong laminae of very fine sand and silt, very abrupt boundary.	ML

yellowish brown (10YR5/6) fine sand, noneffervescent, indeterminate boundary.

dark brown (10YR3/3) and dark yellowish brown (10YR3/4) loam and fine sand, laminated, noneffervescent, indeterminate boundary.

yellowish brown (10YR5/6) fine sand, strongly effervescent, indeterminate boundary.

dark yellowish brown (10YR4/6) fine sand and medium sand, with laminae of olive (5Y5/3) silt and clay silt, strongly effervescent, indeterminate boundary.

dark brown (10YR3/3) medium and coarse sand, slightly effervescent, indeterminate boundary.

dark yellowish brown (10YR4/6) to dark brown (10YR3/3) medium and coarse sand, slightly effervescent, indeterminate boundary.

dark yellowish brown (10YR4/4) medium sand, with few brown to dark brown (7.5YR4/4) thick laminae, slightly effervescent, indeterminate boundary.

olive gray (5Y4/2) medium and coarse sand, violently effervescent, indeterminate boundary.

dark grayish brown (2.5Y4/2) fine and medium sand, with olive gray (5Y4/2) thick silt and clay, silt laminae, violently effervescent, indeterminate boundary.

dark grayish brown (2.5Y4/2) medium and coarse sand with common pea sized pebbles, violently effervescent, indeterminate boundary.

dark grayish brown (2.5Y4/2) fine and medium sand, violently effervescent, refusal.

332- 360 OL
(131-142)

360- 378 OL
(142-149)

378- 402 OU
(149-158)

402- 497 OU
(158-196)

497- 517 OU
(196-204)

517- 600 OU
(204-236)

600- 650 OU
(236-256)

650- 760 OU
(256-299)

760- 810 OU
(299-319)

810- 820 OU
(319-323)

820- 880+UU
(323-346)

ML

ML

SP

SP

SP

SP

SP

SP

SP

SP

SP

DLC-32

Master core number: 567

Location: NW 1/4 Sec. 18, T17N, R12W, Cass Co., 125ft. east of DLC-31 and 35ft. south of Indian Creek rd.

Landscape position: floodbasin channel at foot of Bluffs Terrace scarp

Surface archeology: none

SCS mapped soil: Beaucoup silt, clay loam

Elevation: 132.6m. (435ft.)

Cored by: David S. Leish and Julia E. Clifton, 12-12-83

Described by: Edwin R. Haise, 7-26-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 33 C1 (0- 13)	very dark grayish brown (10YR3/2) silt loam and fine sand; silt loam, weak fine subangular blocky, friable, noneffervescent, abrupt boundary.	ML
33- 60 B21b (13- 24)	black (10YR2/1) silty clay loam, moderate medium columnar breaking to moderate fine angular blocky, firm, noneffervescent, gradual boundary.	CL
60- 75 B22b1 (24- 30)	black (10YR2/1) silty clay loam, moderate coarse columnar breaking to moderate medium angular blocky, firm, noneffervescent, clear boundary.	CL
75- 127 B23b1s (30- 50)	very dark gray (10YR3/1) silty clay, moderate fine subangular blocky, firm, noneffervescent, clear boundary.	CL
127- 170 B24b1s (50- 67)	dark gray (10YR4/1) silty clay, moderate medium columnar, firm, noneffervescent, many moderate to thick very dark grayish brown (10YR3/2) clay coats in pores, clear boundary.	CL
170- 205 B25b1s (67- 81)	dark gray (10YR4/1) silty clay loam, with common fine dark yellowish brown (10YR3/4) Fe mottles, moderate medium subangular blocky, firm, noneffervescent, plentiful fine vertical roots, clear boundary.	CL
205- 246 11B26b1s (81- 97)	dark gray (10YR4/1) clay, with many fine and medium very dark gray (10YR3/1) and with many very fine light gray to gray (10YR6/1) mottles, weak medium subangular blocky, very firm, noneffervescent, few medium and fine roots, clear boundary.	CL
246- 270 11B31b1s (97-106)	dark gray (5Y4/1) clay, with many medium dark grayish brown (2.5Y4/2) and black (5Y2.5/2) and with many medium and fine yellowish brown (10YR5/6) mottles, weak coarse subangular blocky, very firm, noneffervescent, few medium and fine roots, clear boundary.	CL
270- 293 11B32b1s (106-115)	dark gray (5Y4/1) clay, with many medium and fine olive (5Y4/4) and with many fine yellowish brown (10YR5/6) Fe mottles, weak coarse subangular blocky, very firm, noneffervescent, few medium and fine roots, gradual boundary.	CL

293- 522 111C(U) (115-206)

dark greenish gray (5G4/1) silty clay, and coarse silt, weakly stratified to massive with few subangular blocky zones of black (5Y2.5/1) silty clay, noneffervescent, few medium and fine roots, one small area of dark reddish gray (5YR4/2) coarse silt possibly just due to oxidation, clear boundary.

522- 551 UL (206-217)

very dark gray (5Y3/1) silty clay (with strata of fine and medium sand), silty clay, weakly stratified, noneffervescent, one large decomposed uncarbonized piece of organic matter, sandier zones with fine disseminated uncarbonized organic matter, abrupt boundary.

551- 585 UU (217-230)

dark gray (5Y4/1) silt, massive with few laminated zones, strongly effervescent, very few medium pieces of uncarbonized organic matter, possibly roots, gradual boundary.

585- 720+UU (230-283)

dark gray (5Y4/1) silt and pebbly medium and coarse sand, stratified, strongly effervescent, very few medium pieces of uncarbonized organic matter, possibly roots, refusal.

DLG-53

Master core number: 568

Location: NE, NW, SW, Sec. 18, T17N, R12W, Cass Co., 20ft. south of Indian Creek rd. at field entrance drive

Landscape position: floodbasin of broad paleochannel grading to Indian Creek valley

Surface archeology: none

SCS mapped soil: Beaucaup silt, clay loam

Elevation: 131.4m. (431ft.)

Cored by: David S. Leiser and Julia E. Clifton, 12-12-83

Described by: Edwin R. Hajic, 7-26-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 10 C1 (0- 4)	black (10YR2/1) silty clay loam, weak fine subangular blocky, firm, noneffervescent, clear boundary.	CL
10- 39 C2 (4- 15)	black (10YR2/1) silty clay loam, moderate medium angular blocky, firm, noneffervescent, clear boundary.	CL
39- 61 B2b (15- 32)	dark grayish brown (2.5Y4.5/2) heavy, silt loam, with many fine olive brown (2.5Y4/4) mottles, weak medium subangular blocky, friable, noneffervescent, common thin dark grayish brown (2.5Y4/2) clay coats in pores, few thin dark grayish brown (2.5Y4/2) clay coats on ped faces, clear boundary.	ML
61- 100 B3b (32- 39)	grayish brown (2.5Y5/2) silt loam, with many fine olive brown (2.5Y4/4) mottles, very weak medium subangular blocky, friable, noneffervescent, few thin dark grayish brown (2.5Y4/2) coats in pores, one very dark grayish brown (2.5Y3/2) protofina, gradual boundary.	ML
100- 152 C1b (39- 60)	grayish brown (2.5Y5/2) silt loam to fine sandy silt loam at base, with many fine yellowish brown (10YR5/6) Fe mottles, weak coarse subangular blocky, friable, noneffervescent, few fine vertical roots, clear boundary.	ML
152- 192 IIC2b(UU) (60- 76)	dark gray (5Y4/1) fine sandy loam to loam, fine sand at base, massive, very slightly effervescent, stratum at 180-190cm. of olive gray (5Y4/2) silt loam with plentiful fine brown to dark brown (7.5YR4/2) mottles, clear boundary.	SF
192- 480 IIC3b(UU) (76-189)	dark gray (5Y4/1) medium sand, massive, very slightly effervescent, indeterminate boundary.	SF
480- 700 UU (189-276)	black (5Y2.5/1) clay, fine sandy clay, silt, and loamy fine sand, strongly laminated and thinly bedded, slightly to strongly effervescent (variable), few dark brown (7.5YR3/3) laminae, few fine pieces of organic matter, indeterminate boundary.	CL
700- 780+UU (276-307)	dark gray (5Y4/1) pebbly medium and coarse sand, subrounded pebbles, refusal.	SW

DLC-34

Master core number: 569
 Location: NE, NE, SW, Sec. 16, T17N, R13W, Cass Co., 40ft. south of Indian Creek rd.
 and 60ft. west of U.S. Hwy. 100
 Landscape position: broad paleochannel grading to Indian Creek valley.
 Surface archeology: none
 SCS mapped soil: Beaucaup silt, cla. loam
 Elevation: 132.0m. (433ft.)
 Cored by: David S. Leigh and Julie E. Clifton, 12-12-83
 Described by: Edwin R. Haver, 7-7-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 25 AP (0- 10)	black (10YR2/1) silt, clay loam, weak medium angular block, breaking to weak fine angular block, firm, noneffervescent, clear boundary.	CL
25- 55 B1 (10- 22)	black (10YR2/1) silt, clay loam, with common fine very dark grayish brown (2.5Y3/2) and olive brown (2.5Y4/4) mottles, moderate medium subangular block, breaking to moderate fine subangular block, friable, noneffervescent, clear boundary.	CL
55- 93 B2 (22- 37)	dark grayish brown (2.5Y4/2) silt, clay loam to silt loam at base, with many fine olive brown (2. 5Y4/4) mottles, moderate medium subangular block, friable, noneffervescent, man. thin very dark grayish brown (2.5Y3/2) coats on ped faces and pores, clear boundary.	CL
93- 152 11B3 (37- 60)	grayish brown (2.5Y5/2) silt loam with abundant very fine sands, with many fine olive brown (2. 5Y4/4) mottles, weak coarse subangular block, friable, noneffervescent, common thin very dark grayish brown (2.5Y3/2) coats in pores, clear boundary.	ML
152- 182 11C1a(UL) (60- 72)	olive gray (5Y5/2) very fine sand, loam, with few medium olive (5Y4/3) mottles, weak coarse subangular block, friable, noneffervescent, abrupt boundary.	SP
182- 201 11C2a(UL) (72- 79)	olive gray (5Y4/2) very fine sand, massive, noneffervescent, few very fine organic matter bits, very few fine roots, abrupt boundary.	SP
201- 213 UU (79- 84)	olive gray (5Y4/2) silty very fine sand, massive, slightly effervescent, very few fine roots, abrupt boundary.	SP
213- 302 UL (84-119)	olive gray (5Y5/2) very fine sand, massive, noneffervescent, abrupt boundary.	SP
302- 346 UU (119-136)	olive gray (5Y5/2) and olive gray (5Y4/2) and olive (5Y4/3) silt and very fine sand, moderately laminate, slight, effervescent, very abrupt boundary.	SP

346- 355 DU (136-140)	dark grayish brown (2.5Y4/3) fine sand, massive, very slight, effervescent, abrupt boundary.	SP
355- 360 UU (140-142)	olive (5Y4/3) coarse silt, weakly laminated, very slight, effervescent, abrupt boundary.	ML
360- 580 UU (142-228)	dark grayish brown (2.5Y4/2) fine sand, slight, effervescent, indeterminate boundary.	SP
580- 600 UU (228-236)	dark grayish brown (2.5Y4/2) fine sand with little silt, slightly effervescent, abundant fine and medium pieces of uncarbonized organic matter, indeterminate boundary.	SP
600- 690+UU (236-272)	dark grayish brown (2.5Y4/2) pebbly sand, poorly sorted, violently effervescent, refusal.	SW

DLC-35

Master core number: 570
 Location: NW, NW, SW, Sec. 18, T17N, R12W, Cass Co., 20ft. east of M. Windleman's
 fence line and 80ft. south of Indian Creek rd.
 Landscape position: dune on Bath (?) Terrace remnant
 Surface archeology: none
 SCS mapped soil: Plainfield loam, sand
 Elevation: 129.1m. (423ft.)
 Cored by: David S. Leigh and Cynthia C. Danley, 5-59-84
 Described by: Edwin R. Haver, 7-29-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 20 A1 (0- 8)	dark brown (10YR3/3) fine sand, very weak fine subangular block, very friable, noneffervescent, abrupt boundary.	SP
20- 45 B2 (8- 18)	dark yellowish brown (10YR4/4) fine sand, very weak fine subangular block, very friable, noneffervescent, clear boundary.	SP
45- 88 C (18- 35)	yellowish brown (10YR5/6) fine sand, single grain, loose, noneffervescent, clear boundary.	SP
88- 307 UL (35-121)	yellowish brown (10YR5/8) fine sand, noneffervescent, indeterminate boundary.	SP
307- 350 UL (121-138)	dark yellowish brown (10YR4/4) fine sand, noneffervescent, indeterminate boundary.	SP
350- 420+UL (138-165)	dark brown (10YR3/3) loam, noneffervescent, refusal.	ML

DLC-36

Master core number: 571
 Location: NE, NE, NE, Sec. 25, T16N, R12W, Moreau County
 Landscape position: medial alluvial fan
 SCS mapped soil: Plainfield loam, sand
 Elevation: 140.2m (460ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 50 SOLUM (0- 20)	loamy sand, abrupt boundary	SP
50- 490+ C (OL) (20-189)	yellowish brown (10YR5/8) to light olive brown (2.5Y5/6) medium sand, single grain, noneffervescent, refusal.	SP
DLC-37		
Master core number: 572		
Location: NW, NE, SE, Sec. 3, T17N, R13W, Cass County		
Landscape position: dune on Bluffs Terrace (?)		
Surface archeology: none		
SCS mapped soil: Plainfield loam, sand		
Elevation: 135.3m. (444ft.)		
Cored by: David S. Leish and Cynthia G. Danley, 5-29-84		
Described by: Edwin R. Hajic, 8-12-84		
Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 152 OL (0- 60)	solum of Plainfield loamy sand, fine sand.	SP
152- 254 C (OL) (60-100)	light olive brown (2.5Y5/4) fine sand, single grain, loose, noneffervescent, abrupt boundary.	SP
254- 422 O/DL (100-166)	dark yellowish brown (10YR4/4) and dark yellowish brown (10YR3/4) fine sand and medium sand, stratified with many grayish brown (2.5Y5/2), dark grayish brown (2.5Y4/2), dark yellowish brown (10YR4/4), and brown to dark brown (7.5YR4, 5/2) silt, sandy silt and clayey silt, thin to thick strong laminae (few with reddish brown tinge), noneffervescent, clear boundary.	SP
422- 660 DU (166-260)	olive brown (2.5Y4/4) fine sand and medium sand, stratified as above, silt is thin to thick strong laminae (few with reddish brown tinge), variable strongly to slightly effervescent, clear boundary.	SP
660- 720+DU (260-283)	light olive brown (2.5Y5/4) fine sand, strong, effervescent, refusal.	SP

DLC-38

Master core number: 573
 Location: NE, NW, NE, Sec. 25, T17N, R13W, Cass County
 Landscape position: Bur Island Channel
 SCS mapped soil: Raddle silt loam
 Elevation: 132.6m (435ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 315 SOLUM (0- 45)	light silt loam, clear boundary	ML
115- 178 C (MDL) (45- 70)	grayish brown (2.5Y5/2) sandy silt loam, with common medium dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocky, noneffervescent, few very thin sand lenses toward base, gradual boundary.	ML
178- 232 MDL (70- 91)	stratified light brownish gray (2.5Y6/2) fine sandy loam and grayish brown (2.5Y5/2) fine sand, weak coarse subangular blocky, noneffervescent, strata are 5-10cm, thick, gradual boundary.	SP
232- 348 O/DL (91-137)	light yellowish brown (2.5Y6/4) medium sand, noneffervescent, abrupt boundary.	SF
348- 360 UL (137-142)	olive gray (5Y5/2) fine silt, with few large dark yellowish brown (10YR4/6) mottles, massive, noneffervescent, abrupt boundary.	ML
360- 600 O/DU (142-236)	light olive brown (2.5Y5/4) medium to coarse sand, single grain, slightly to very slightly effervescent, indeterminate boundary.	SP
600- 720+O/DU (236-283)	light olive brown (2.5Y5/4) coarse, very coarse sand, and pebbles, single grain, very slightly effervescent, only few pebbles, refusal.	SW

DLC-39

Master core number: 574

Location: SE.1/4, NE.1/4, Sec. 1, T16N, R13W, Morgan County

Landscape position: Indian Creek alluvium

SCS mapped soil: Northern silt loam

Elevation: 135.9m (446ft.)

Cored by: DSL, CCD

Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 140 SOLUM (0- 55)	silt loam, clear boundary	ML
140- 165 BC1 (55- 65)	dark yellowish brown (10YR4/4) fine sandy loam, weak medium subangular blocky, noneffervescent, gradual boundary.	SP
165- 184 BC2 (65- 72)	brown to dark brown (10YR4/3) fine sandy loam, weak very coarse subangular blocky, noneffervescent, abrupt boundary.	SP
184- 238 O/DL (72- 94)	light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, clear boundary.	SP
238- 296 MDL (94-117)	light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, clear boundary.	SP
296- 296 MDL (117-117)	mottled dark yellowish brown (10YR4/6) silty sandy loam, moderate medium subangular to angular blocky, noneffervescent, original matrix color looks like 2.5Y5/2, clear boundary.	SP
296- 330+DL (117-130)	dark yellowish brown (10YR4/6) medium sand, single grain, noneffervescent, refusal.	SP

DLC-40

Master core number: 575

Location: NW.1/4, SE.1/4, Sec. 1, T16N, R13W, Morgan County

Landscape position: Indian Creek alluvium

SCS mapped soil: Beaucaup silty clay loam

Elevation: 134.1m (440ft.)

Cored by: DSL, CCD

Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 173 SOLUM (0- 68)	clay, clear boundary	CL
173- 208 C(MDL) (68- 82)	greenish gray (5Y6/1) clay loam to silty clay loam, with few medium yellowish brown (10YR5/8) mottles, weak coarse subangular blocky, noneffervescent, clear boundary.	CL
208- 300 DL (82-118)	grayish brown (2.5Y5/2) medium sand, single grain, noneffervescent, few pebbles, indeterminate boundary.	SP
300- 360 UL (118-142)	dark gray (5Y4/1) light silt loam to silt, massive, noneffervescent, few fine diffuse organic fragments at top of zone, indeterminate boundary.	ML
360- 600+UL (142-236)	dark grayish brown (2.5Y4/2) medium to coarse sand, single grain, noneffervescent, refusal.	SP

DLC-41

Master core number: 576
 Location: NW 1/4 Sec. 1, T16N, R13W, Morgan County
 Landscape position: dune on bluffs terrace
 SCS mapped soil: Plainfield loam, sand
 Elevation: 135.6m (445ft.)
 Cored by: DSL, CCD
 Described by: DSL

320- 430 O/DL
 (126-169)
 light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, few very coarse sand grains toward base, indeterminate boundary.

430- 480+O/DU
 (169-189)
 light olive brown (2.5Y5/4) coarse sand, single grain, very slightly effervescent, includes common very coarse sand and pebble grains, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 96 SOLUM (0- 36)	fine sand, very abrupt boundary	SP
96- 119 Eub (36- 47)	dark yellowish brown (10YR4/4) sand, loam, moderate medium subangular blocky, noneffervescent, gradual boundary.	SP
119- 138 Cb(OL) (47- 54)	yellowish brown (10YR5/6) fine to medium sand, single grain, noneffervescent, abrupt boundary.	SP
138- 157 OL (54- 62)	yellowish brown (10YR5/6), yellowish brown (10YR5/4) and yellowish brown (10YR5/8) medium sand, thinly stratified and laminated, moderate very coarse plates, noneffervescent, abrupt boundary.	SP
157- 192 MDL (62- 76)	light brownish gray (2.5Y6/2) silt to light silt loam, with common medium dark yellowish brown (10YR4/6) and with faint few medium pinkish gray (5YR7/2) mottles, moderate coarse subangular blocky, noneffervescent, very abrupt boundary.	ML
192- 223 OL (76- 88)	dark yellowish brown (10YR4/6) medium sand, single grain, noneffervescent, one thin laminae of light brownish gray (2.5Y6/2) silt, at 203-204cm., very abrupt boundary.	SP
223- 239 MDL (86- 94)	light brownish gray (2.5Y6/2) silt, noneffervescent, faintly laminated with few very thin medium sand lenses, faint light reddish brown (5YR6/3) lenses, and very thin Fe lenses, very abrupt boundary.	ML
239- 303 O/DL (94-119)	light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, abrupt boundary.	SP
303- 313 DL (119-123)	grayish brown (2.5Y5/2) light silt loam, massive, noneffervescent, few very thin Fe lenses and a faint pinkish brown hue, very abrupt boundary.	ML
313- 320 OL (123-126)	yellowish brown and dark yellowish brown (10YR5/8) (10YR4/6), reddish brown (5YR4/4) light brownish gray (2.5Y6/2) and black (10YR2/1) sandy loam, very thinly laminated, massive, noneffervescent, this is a very high, oxidized zone with varves?, abrupt boundary.	SP

DLC-42

Master core numbers: 577

Location: SE. SE. NW. Sec. 24, T17N, R13W, Cass Co., midwa, between Bluffs Terrace
scarpe and drainage ditch on C. Winkelman's field road

Landscape position: possible natural levee in broad paleochannel grading to
Indian Creek valley

Surface archeological none

SCS mapped soil: Beardstown loam

Elevation: 132.3m. (434ft.)

Cored by: David S. Leish and Cynthia C. Danley, 5-29-84

Described by: Edwin R. Hajic, 7-9-84

420- 540 0
(125-213)

dark yellowish brown (10YR3/6) fine sand to
coarse sand, with few pebbles, poorly sorted,
noneffervescent, indeterminate boundary.

540- 600+D
(213-236)

olive gray (5Y4/2) pebbly coarse sand and coarse
sandy pebbles, poorly sorted, pebbles are lenticular
and sedimentary subrounded to subangular, refusal.

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 27 Ap (0- 11)	very dark brown (10YR2/2) silt loam, weak fine granular, friable, noneffervescent, abrupt boundary.	ML
27- 44 B1 (11- 17)	dark yellowish brown (10YR3/4) silt loam, weak fine subangular blocks, friable, noneffervescent, clear boundary.	ML
44- 89 B2 (17- 35)	dark yellowish brown (10YR3/4) heavy silt loam, with few fine manganese mottles, weak medium subangular blocks, friable, noneffervescent, gradual boundary.	ML
89- 115 11B3 (35- 45)	brown to dark brown (10YR4/3) loam, with common fine dark yellowish brown (10YR3/6) mottles, weak medium subangular blocks, friable, noneffervescent, gradual boundary.	ML
115- 130 111C1 (45- 51)	dark yellowish brown (10YR4/4) loam, fine sand, with common fine brown to dark brown (10YR4/3) mottles, very weak medium subangular blocks, very friable, noneffervescent, gradual boundary.	SP
130- 310 OL (51-122)	dark yellowish brown (10YR3/4) fine sand, noneffervescent, indeterminate boundary.	SP
310- 345 O/UU (122-136)	dark yellowish brown (10YR3/6) fine sand, and olive gray (5Y5/2), very dark gray (5Y3/1), and dark gray (5Y4/1) clay, strongly laminated, clay is strongly effervescent and sand is slightly effervescent, indeterminate boundary.	SP
345- 360 OU (136-142)	dark yellowish brown (10YR4/6) medium and coarse sand, slightly effervescent, indeterminate boundary.	SP
360- 420 O/UU (142-165)	brown to dark brown (7.5YR4/4) and dark gray (5Y4/1) clay, and dark yellowish brown (10YR4/6) medium and coarse sand, stonel, laminated, very slightly effervescent to noneffervescent, indeterminate boundary.	SW

DLC-43

Master core number: 578
 Location: NW, NW, SE, Sec. 13, T17N, R13W, Cass Co., 25ft. east of drainage ditch
 at the west end of field road
 Landscape position: Indian Creek natural levee
 Surface archeology: none
 SCS mapped soil: Doker, silt loam
 Elevation: 131.7m. (432ft.)
 Cored by: David S. Leigh and Cynthia C. Danley, 5-31-84
 Described by: Edwin R. Hajec, 8-12-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 159 C1 (0- 63)	very dark brown (10YR2/2) and very dark grayish brown (10YR3/2), and dark brown (10YR3/3) and brown to dark brown (10YR4/3) heavy silt loam, fine sandy silt and few units of fine sand, stratified with some units exhibiting strong laminations, massive, bioturbation or weak fine subangular blocky, one zone with micro cross laminations, slightly effervescent with few zones strongly effervescent (sand, and siltier zones), few zones with few fine roots, abrupt boundary.	ML
159- 332 C2 (63-131)	very dark grayish brown (10YR3/2) and very dark grayish brown (2.5Y3/2), and very dark gray (10YR3/1) silt, silt loam and few units of fine sand, variable colors, stratified with some units exhibiting strong laminations, massive, bioturbation or weak to moderate fine subangular blocky, noneffervescent, few thin dark yellowish brown (10YR3/4) and redder Fe coats on ped faces, very abrupt boundary.	ML
332- 390 MDL (131-154)	buried solum very dark gray (10YR3/1) silt, clay loam, with common fine and medium dark yellowish brown (10YR3/4) and darker Fe mottles, noneffervescent, clear boundary.	CL
390- 550 Cb(MUL) (154-217)	very dark gray (5Y2.5/1) and dark gray (5Y4/1) silty clay loam and silty clay, with common fine and medium dark yellowish brown (10YR3/4) Fe mottles, noneffervescent, weakly stratified with weak subangular blocky structure throughout, clear to abrupt boundary.	CL
550- 760 MUL (217-299)	dark greenish gray (5GY4/1) coarse silt, with common medium and large dark yellowish brown (10YR3/4) and olive (5Y4/4) mottles, massive, noneffervescent, clear boundary.	ML
760- 925 UL (299-364)	dark greenish gray (5GY4/1) coarse silt, massive, noneffervescent to very slightly effervescent at base, common uncarbonized medium and fine organic matter pieces, clear to abrupt boundary.	ML
925- 930+UU (364-366)	dark gray (5Y4/1) fine and medium sand, strongly effervescent, refusal.	SF

DLC-44

Master core number: 579
 Location: NW, SE, Sec. 13, T17N, R13W, Cass Co., approx. 100ft. west of terrace scarp and 125ft. west of DLC-37
 Landscape position: Indian Creek floodplain
 Surface archeology: none
 SCS mapped soil: Doberman silt loam
 Elevation: 131.7m. (432ft.)
 Cored by: David S. Leish and Cynthia C. Danley, 5-31-84
 Described by: Edwin R. Hajic, 8-12-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 107 C (0- 42)	black (10YR2/1) to dark brown (10YR3/3) variable, silt loam and silt, clay loam, stratified with zones with moderate fine subangular blocky structure, friable, noneffervescent, few zones moderately to heavily bioturbated, abrupt boundary.	ML
107- 140 A1b1 (42- 55)	black (10YR2/1) heavy, silt loam, weak fine angular blocky, firm, noneffervescent, clear boundary.	ML
140- 163 Btb1 (55- 64)	very dark brown (10YR2/2) silty clay loam, weak medium subangular blocky, firm, noneffervescent, common thin black (10YR2/1) clay coats on ped faces, clear boundary.	CL
163- 205 A1b2 (64- 81)	black (10YR2/1) silty clay loam, weak fine granular, firm, noneffervescent, clear boundary.	CL
205- 276 B2b2s (81-109)	very dark gray (10YR3/1) heavy, silt, clay loam, with few fine very dark grayish brown (10YR3/2) mottles, moderate medium subangular blocky, firm, noneffervescent, few fine Fe concretions, clear boundary.	CL
276- 335 B3b2s (109-132)	dark gray (10YR4/1) heavy, silty clay loam, with common fine dark yellowish brown (10YR3/4) mottles, weak coarse subangular blocky, firm, noneffervescent, many fine Fe concretions, few fine roots, clear boundary.	CL
335- 390 C(MDL) (132-154)	very dark grayish brown (2.5Y3/2) and dark grayish brown (2.5Y4/2) at base silty clay loam, with many fine and medium dark yellowish brown (10YR4/6) and dark yellowish brown (10YR3/6) and olive brown (2.5Y4/4) mottles, weak coarse subangular blocky, firm, noneffervescent, clear boundary.	CL
390- 476 MUL (154-188)	dark greenish gray (5GY4/1) silt, clay zones, with common fine and medium olive brown (2.5Y3/4) mottles, massive, noneffervescent, fining upward sequence with sand and silt increasing with depth, few fine roots, gradual boundary.	CL
478- 519 UL (188-204)	dark gray (5Y4/1) sandy, silt, clay to silty sand at base, weakly stratified, noneffervescent, few fine roots, very abrupt boundary.	CL

S19- 530+UL
(204-209)

olive (5Y4/4) fine sand, refusal

SF

DLC-45

Master core number: 580
 Location: SW, SE, NW, Sec. 19, T17N, R12W, Cass Co., on eastern margin of marshy area with reed and sedge vegetation
 Landscape position: immediately west of Bath (?) Terrace scarp in broad paleochannel grading to Indian Creek valley.
 Surface archeology: none
 SCS mapped soil: Darwin silt, clay
 Elevation: 131.7m. (432ft.)
 Cored by: David S. Leish and Cynthia C. Danley, 5-31-84
 Described by: Edwin R. Hajic, 7-8-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 23 A0 (0- 9)	black (5Y2.5/1) clay loam, weak fine granular, firm, noneffervescent, many fine and very fine roots, clear boundary.	CL
23- 72 B2s (9- 28)	black (5Y2.5/1) clay loam with high sand content, weak medium subangular blocky, firm, noneffervescent, many very fine roots and few medium roots, occasional pea sized pebble, gradual boundary.	CL
72- 120 B3s (28- 47)	black (5Y2.5/1) sandy clay loam, weak medium subangular blocky, firm, noneffervescent, plentiful medium roots, common pea sized pebbles, one olive gray (5Y4/2) zone at 101-104cm., clear boundary.	CL
120- 240 11Ca(UL) (47- 94)	very dark grayish brown (2.5Y3/2) fine sand with some medium sand, noneffervescent, indeterminate boundary.	SF
240- 480+OU (94-189)	dark yellowish brown (10YR4/4) poorly sorted fine to coarse sand with gravels, coarse gravel lens at 450cm., slightly effervescent, refusal.	SW

DLC-46

Master core number: 561
 Location: NE, SE, SW, Sec. 19, T17N, R12W, Cass Co., 300ft. east southeast of DLC-45
 Landscape position: Bath (?) Terrace
 Surface archeology: one flake seen
 SCS mapped soil: Sparta loam, sand
 Elevation: 134.7m. (442ft.)
 Cored by: David S. Leish and Cynthia C. Danley, 5-31-84
 Described by: Edwin R. Haisic, 7-8-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 24 Ap (0- 9)	dark yellowish brown (10YR3/4) fine sand, single grain, loose, noneffervescent, abrupt boundary.	SP
24- 47 A (9- 19)	dark yellowish brown (10YR4/4) fine sand with some silt, single grain, loose, noneffervescent, clear boundary.	SP
47- 64 B1 (19- 25)	dark yellowish brown (10YR4/4) loam, fine sand, weak fine subangular blocks, friable, noneffervescent, clear boundary.	SF
64- 126 B2 (25- 50)	dark yellowish brown (10YR4/4) and brown to dark brown (7.5YR4/4) and strong brown (7.5YR3/6) loam to loam, fine sand at base, weak medium subangular blocks, friable, noneffervescent, probably originally stratified, few pebbles and gravels from 110-126cm., clear boundary.	SW
126- 220 C (50- 87)	brown to dark brown (7.5YR4/4) coarse silt, strong brown (7.5YR3/6), dark yellowish brown (10YR3/6), (10YR4/6) fine sand, loam and fine sandy clay loam, moderately thick laminae and thin beds, noneffervescent, correlate with strongly laminated zones in other cores of this transect except here composed largely of sandy laminae and very rare deoxidized colors, indeterminate boundary.	ML
220- 480+OL (87-189)	dark yellowish brown (10YR3/4) fine and medium sand with pebbles, noneffervescent, refusal.	SW

DLC-47

Master core number: 562
 Location: NE, SE, SW, Sec. 19, T17N, R12W, Cass County
 Landscape position: Bus Island channel
 SCS mapped soil: Darwin silt, clay loam
 Elevation: 131.7 (432ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 83 SOLUM (0- 33)	highly organic clay, clear boundary.	CL
83- 118 UU (33- 46)	dark greenish gray (5G4/1) pebbly clay, weak coarse subangular blocks, very slight effervescent, abrupt boundary.	CL
118- 298 D/UU (46-117)	light olive brown (2.5Y5/4) poorly sorted coarse sand and pebbles, vel., slightly effervescent, abrupt boundary.	SW
298- 300+D/UU (117-118)	dark greenish gray (5G4/1) pebbly, coarse sand, very slightly effervescent, one angular chert pebble has a 6cm. long axis, 1.8cm. short axis, and 2.5cm. intermediate axis, refusal.	SW

DLC-48

Master core number: 583

Location: SW. SE. NW. Sec. 19, T. 17N. R. 12W, Cass Co., approx. 75ft. east of drainage ditch just off of ditch road

Landscape position: immediately west of lowest area of old marsh in broad paleochannel grading to Indian Creek valley

Surface archeology: none

SCS mapped soil: Darwin silty clay

Elevation: 131.4m. (431ft.)

Cored by: David S. Leish and Cynthia C. Denton, 6-1-84

Described by: Edwin R. Hajic, 7-9-84

Depth (in.) or Zone	Description	Unified Soil Classification		
0- 24 Ap (0- 9)	black (5Y2.5/1) silty clay loam, weak fine subangular blocky, firm, noneffervescent, clear boundary.	CL	330- 400 UU (130-157)	very dark grayish brown (2.5Y3/2) fine to coarse sand, poorly sorted, few pebbles, strongly effervescent, indeterminate boundary.
24- 60 B1s (9- 24)	black (5Y2.5/1) silty clay loam, moderate medium subangular blocky, firm, noneffervescent, many dark yellowish brown (10YR3/4) coats in pores, clear boundary.	CL	400- 450 DU (157-177)	brown (10YR5/3) sand, little recovery, indeterminate boundary.
60- 119 B2s (24- 47)	dark olive gray (5Y3/2) silty clay, with common large very dark gray (5Y3/1) mottles, moderate medium subangular blocky, firm, noneffervescent, many very dark gray (5Y3/1) moderately thick coats in pores and thin coats on ped faces, one krotovina of black (5Y2.5/1) silty clay, clear boundary.	CL	450- 480 UU (177-189)	very dark gray (5Y3/1) clayey sand and sand, clay, strongly effervescent sand and very slightly effervescent clay, no original stratification preserved, few pea sized pebbles at base, refusal.
119- 140 B31s (47- 55)	olive (5Y4/4) silty clay, with many fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, many black (5Y2.5/1) moderately thick coats in pores and few coats on ped faces, clear boundary.	CL	480- 520 UU (189-205)	dark gray (5Y4/1) poorly sorted sand and coarse sand, few pea sized pebbles, strongly effervescent, indeterminate boundary.
140- 120 B32s (55- 47)	dark greenish gray (5G4/1) silty clay, with common fine dark yellowish brown (10YR4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, one zone of olive brown (2.5Y3/4) silty clay at 164-170cm., common black (5Y2.5/1) moderately thick coats in pores and few on ped faces, plentiful medium roots, clear to abrupt boundary.	CL	520- 600+DU (205-236)	dark yellowish brown (10YR3/6) poorly sorted sand with common pebbles and gravel, refusal.
120- 260 11Cg(UU) (47-102)	dark greenish gray (5G4/1) silt, massive, strongly effervescent, few medium roots, very abrupt boundary.	ML		
260- 330 UU (102-130)	dark gray (5Y4/1) silt and silty clay, olive gray (5Y4/2) clay and pebble lenses, thin, bedded and thickly laminated, strongly effervescent, sands are poorly sorted, abrupt boundary.	ML		

DLC-49

Master core number: 584
 Location: NW, SE, NE, Sec. 30, T17N, R12W, Cass County,
 Landscape position: dune on Bath (?) terrace
 SCS mapped soil: Plainfield loam, sand
 Elevation: 136.6m (448ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 77 SP01L (0- 30)	abrupt boundary	SP
77- 157 SOLUMB (30- 62)	medium loamy sand, abrupt boundary	SP
157- 220 2Bb (62- 87)	brown to dark brown (10YR4/3) clay loam, moderate medium prismatic, firm, noneffervescent, gradual boundary.	CL
220- 263 Cb1OL (87-104)	brown to dark brown (10YR4/3) sandy loam, weak coarse subangular blocky, noneffervescent, gradual boundary.	SP
263- 300 MDL (104-118)	light olive brown (2.5Y5/6) sandy clay loam, with common medium light brownish gray (2.5Y6/2) mottles, weak coarse subangular blocky, noneffervescent, gradual boundary.	CL
300- 335 OL (118-132)	dark yellowish brown (10YR4/6) medium sand, single grain, noneffervescent, gradual boundary.	SP
335- 500 O/DU (132-197)	light olive brown (2.5Y5/6) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
500- 590 O/DU (197-232)	grayish brown (2.5Y5/2) to light olive brown (2.5Y5/4) coarse sand, single grain, very slightly effervescent, indeterminate boundary.	SP
590- 720+O/DU (232-283)	grayish brown (2.5Y5/2) to light olive brown (2.5Y5/4) coarse, very coarse sand and pebbles, very slightly effervescent, refusal.	SM

DLC-50

Master core number: 585
 Location: SW, NW, NE, Sec. 11, T16N, R10W, Morgan County,
 Landscape position: dune on bluffs terrace
 SCS mapped soil: Sparta loam, sand
 Elevation: 135.6m (445ft.)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 100 SOLUM (0- 39)	loam, sand, abrupt boundary	SP
100- 238 2Bub (39- 94)	grayish brown (2.5Y5/2) to light brownish gray (2.5Y6/2) heavy silt loam, with common medium yellowish brown (10YR5/2) mottles, moderate very coarse prismatic, very firm, noneffervescent, pinkish gray (5YF-7/2) hue at 175cm., silts on ped faces at top of zone, soil structure fades, gradual boundary.	ML
238- 300 OL (94-118)	brown to dark brown (10YR4/3) sand, loam, stabilized with few silt lenses, single grain, noneffervescent, indeterminate boundary.	SP
300- 400 OL (118-157)	dark yellowish brown (10YR4/4) medium sand, single grain, noneffervescent, indeterminate boundary.	SP
400- 490 O/DU (157-192)	light olive brown (2.5Y5/4) fine sand, single grain, very slight, effervescent, indeterminate boundary.	SP
490- 640 O/DU (192-252)	light olive brown (2.5Y5/4) medium sand, single grain, very slight, effervescent, indeterminate boundary.	SP
640- 690 UU (252-272)	dark grayish brown (2.5Y4/2) silty fine sand, mass, very slight, effervescent, few fine organics, indeterminate boundary.	SP
690- 770+O/DU (272-303)	brown (10YR5/2) medium to coarse sand, single grain, very slight, effervescent, refusal.	SP

DLC-51

Master core number: 586

Location: SE, SE, SW, Sec. 6, T16N, R12W, Morgan Co., 25ft. west of a 90 degree turn in the ditch dividing sections 6 and 7

Landscape position: edge of slight depressional area on Bluffs (?) Terrace

Surface archeology: none

SCS mapped soil: Sparta loam, sand

Elevation: 135.3m. (444ft.)

Cored by: David S. Leish and Cynthia C. Danley, 6-6-84

Described by: Edwin R. Hajic, 8-13-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 139 OL (0- 55)	solum of Sparta loam, sand, clear boundary	SP
139- 166 C(DL) (55- 65)	light olive brown (2.5Y5/4) to light olive brown (2.5Y5/6) fine sand, single grain, loose, noneffervescent, clear boundary.	SF
166- 219 OL (65- 86)	dark brown (10YR3/3) and dark yellowish brown (10YR4/4) and dark yellowish brown (10YR5/5) loamy sand, stratified with two zones of grayish brown (2.5Y5/2) sand, loam, noneffervescent, abrupt boundary.	SP
219- 342 OL (86-135)	yellowish brown (10YR5/6) fine and medium sand, noneffervescent, lower half has some sand, loam units, indeterminate boundary.	SP
342- 406 OU (135-160)	dark grayish brown (10YR4/2) and dark yellowish brown (10YR4/4) fine and medium sand and silt, strongly effervescent, indeterminate boundary.	SP
406- 457 OU (160-180)	dark yellowish brown (10YR4/6) fine sand (with some silt), slightly effervescent, indeterminate boundary.	SP
457- 600+DU (180-236)	dark grayish brown (2.5Y4/2) medium sand well sorted to medium and coarse poorly sorted sand, many very fine and fine pebbles, slightly effervescent, refusal.	SP

DLC-52

Master core number: 587

Location: SW, SE, SW, Sec. 6, T16N, R12W, Morgan Co., on east-west field road 100ft. east of a north-south field road on the edge of a low rise just to the east of a slight depressional area

Landscape position: natural levee of Indian Creek paleochannel

Surface archeology: none

SCS mapped soil: Worthen silt loam

Elevation: 135.3m. (444ft.)

Cored by: David S. Leish and Cynthia C. Danley, 6-6-84

Described by: Edwin R. Hajic, 8-13-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 48 A1 (0- 19)	black (10YR2/1) silt loam, weak fine granular, friable, noneffervescent, clear boundary.	ML
48- 87 A3 (19- 34)	very dark brown (10YR2/2) silt loam, weak medium granular, friable, noneffervescent, gradual boundary.	ML
87- 121 B21 (34- 48)	light olive brown (2.5Y5/4) silt loam, weak fine subangular blocky, friable, slightly effervescent, clear boundary.	ML
121- 153 B22 (48- 60)	dark grayish brown (10YR4/2) heavy silt loam, with many fine dark yellowish brown (10YR3/4) mottles, moderate medium subangular blocky, friable, very slight, effervescent, gradual boundary.	ML
153- 184 B31 (60- 72)	grayish brown (2.5Y5/2) heavy silt loam, with many fine light olive brown (2.5Y5/4) mottles, weak medium subangular blocky, friable, noneffervescent, abrupt boundary.	ML
184- 220 11B32 (72- 87)	grayish brown (10YR5/2) sandy clay loam, with many fine dark yellowish brown (10YR4/6) mottles, weak coarse subangular blocky, firm, noneffervescent, very few pale brown (10YR6/3) fine coats on ped faces, gradual boundary.	CL
220- 258 11C(MDL) (87-102)	grayish brown (2.5Y5/2) sandy clay loam, with many medium dark yellowish brown (10YR4/6) and with common fine weak red (2.5YR5/2) faint mottles, weak coarse subangular blocky, firm, noneffervescent, abrupt boundary.	CL
258- 269 MUL (102-106)	olive gray (5Y5/2) silt loam high in sand, with many fine dark yellowish brown (10YR4/4) and dark yellowish brown (10YR4/6) Fe mottles, massive, very slightly effervescent, abrupt boundary.	ML
269- 460+OU (106-181)	dark yellowish brown (10YR4/4) fine and medium sand (with some silt), strong, effervescent, refusal.	SF

DLC-53

Master core number: 568
 Location: NW, NM, Sec. 7, T17N, R12W, Morgan Co., 40ft. south of field rd. and 30ft. east of Hw. 100 on east side of ditch
 Landscape position: natural levee of Indian Creek paleochannel
 Surface archeology: none
 SCS mapped soil: Tice silt, clay loam
 Elevation: 135.0m. (443ft.)
 Cored by: David S. Leish and Cynthia C. Danley, 6-6-84
 Described by: Edwin R. Hauric, 8-3-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 142 OL/U (0- 56)	solum of Northern silt loam, gradual boundary	ML
142- 244 C(MDU) (56- 96)	grayish brown (2.5Y5/2) light silt loam, with many fine and medium dark yellowish brown (10YR4/6) Fe mottles, massive to weakly laminated at base strongly effervescent, clear boundary.	ML
244- 266 MUU (96-105)	olive gray (5Y5/2) silt, clay loam, with many fine brown (7.5YR5/2) faint mottles and with few fine yellowish brown (10YR5/6) Fe mottles, massive, very slightly effervescent, clear boundary.	CL
266- 283 MUU (105-111)	olive gray (5Y5/2) sand, clay loam, with few fine dark yellowish brown (10YR4/6) Fe mottles, slightly effervescent, abrupt boundary.	CL
283- 420 OU (111-165)	dark yellowish brown (10YR4/4) medium sand, fair sorting, few pebbles, slightly to strongly effervescent, indeterminate boundary.	SP
420- 470 UU (165-185)	dark gray (5Y4/1) silt, laminated(?), violently effervescent, indeterminate boundary.	ML
470- 500+UU (185-197)	dark gray (5Y4/1) silt, medium and coarse sand, poorly sorted, common very fine and fine pebbles, violently effervescent, refusal.	SP

DLC-54

Master core number: 569
 Location: NE, SW, SE, Sec. 1, T16N, R13W, Morgan Co.,
 Landscape position: Indian Creek alluvium
 SCS mapped soil: Northern silt loam
 Elevation: 134.4m (441ft)
 Cored by: DSL, CDD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 163 SOLUM (0- 64)	silt, clay loam, clear boundary	CL
163- 212 C(MDL) (64- 83)	light olive gray (5Y6/2) fine silt, with common medium yellowish brown (10YR5/8) mottles, massive, noneffervescent, very abrupt boundary.	ML
212- 229 UU (83- 90)	dark gray (5Y4/1) silty clay loam, massive, strongly effervescent, many small gastropods and snails, clear boundary.	CL
229- 252 UU (90- 99)	light brownish gray (2.5Y6/2) medium sand, single grain, very slightly effervescent, very abrupt boundary.	SP
252- 270 UU (99-106)	dark gray (5Y4/1) silty clay loam, massive, strongly effervescent, many gastropods and snails, abrupt boundary.	CL
270- 350+D/UU (106-138)	grayish brown (2.5Y5/2) medium and coarse sand, with common medium olive brown (2.5Y4/4) mottles, single grain, very slightly effervescent, refusal.	SP

DLC-55

Master core number: 590
 Location: NE, NW, Sec. 8, T16N, R12W, Morgan Co., in northeast field corner
 15ft. south of fence line and on west edge of field road
 Landscape position: distal alluvial fan
 Surface archeology: none
 SCS mapped soil: silt loam
 Elevation: 137.5m. (451ft.)
 Cored by: David S. Leish and Cynthia C. Danley, 6-6-84
 Described by: Edwin R. Hajic, 8-13-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
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0- 224 OL	solum of Worthen silt loam, strong profile, slightly cumelic, clear boundary.	ML
224- 377 C (MDU) (88-148)	grayish brown (2.5Y5/2) silt and silt loam, with many fine and medium dark yellowish brown (10YR4/6) Fe mottles, massive to moderately laminated at base slightly to strongly effervescent, common gastropods, whole and fragmented from 349-370cm., clear boundary.	ML
377- 450 DU (148-177)	dark grayish brown (2.5Y4/2) loam to light olive brown (2.5Y5/4) loamy fine sand with common grayish brown (2.5Y5/2) silt laminae, weakly stratified, noneffervescent to slightly effervescent with depth, indeterminate boundary.	ML
450- 600+0 (177-236)	oxidized sand(?), refusal	SP

DLC-57

Master core number: 592
 Location: NE, NW, Sec. 30, T17N, R12W Cass County
 Landscape position: Bath terrace
 SCS mapped soil: Plainfield loamy sand
 Elevation: 139.9m (459ft)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
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0- 50 SOLUM (0- 20)	medium sand, gradual boundary	SP
50- 480 OL (20-189)	dark yellowish brown (10YR4/6) to yellowish brown (10YR5/6) medium sand, single grain, noneffervescent, diffuse boundary.	SP
480- 540+0L (189-213)	dark yellowish brown (10YR4/4) loamy medium sand, single grain, noneffervescent, buried solum C ₂ , refusal.	SP

DLC-56

Master core number: 591
 Location: NE, SE, SW, Sec. 19, T17N, R12W, Cass County
 Landscape position: Bluffs terrace
 SCS mapped soil: Plainfield loamy sand
 Elevation: 135.6m (445ft)
 Cored by: DSL, CCD
 Described by: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
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0- 30 SOLUM (0- 12)	loamy sand, gradual boundary	SP
30- 320 C (OL) (12-126)	dark yellowish brown (10YR4/4) medium sand, single grain, noneffervescent, diffuse boundary.	SP
320- 410 OL (126-161)	brown to dark brown (10YR4/3) medium sand, with few large dark yellowish brown (10YR3/4) mottles, single grain, noneffervescent, few very coarse sand grains, diffuse boundary.	SP
410- 480 OL (161-189)	dark yellowish brown (10YR3/4) coarse sand, noneffervescent, few pebbles included, diffuse boundary.	SP
480- 540 O/DL (189-213)	light olive brown (2.5Y5/4) coarse sand, no pebbles, single grain, noneffervescent, diffuse boundary.	SP
540- 590+0/DL (213-232)	light olive brown (2.5Y5/4) coarse, very coarse sand, and pebbles, noneffervescent, refusal.	SW

DLC-58

Master core number: 583

Location: SW. 1/4, NW. 1/4, Sec. 12, T16N, R12W, Morgan County,

Landscape position: dune on bluffs terrace

SCS mapped soil: Sparta loam, sand

Elevation: 135.9m (446ft)

Cored to: DGL, CCD

Described to: DGL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 120 SOLUM (0- 59)	loam, sand, gradual boundary	SP
150- 200 C(OL) (59- 79)	yellowish brown (10YR5/6) fine and medium sand, gradual boundary.	SP
200- 228 (OL) (79- 89)	yellowish brown (10YR5/6) coarse sand, single grain, noneffervescent, clear boundary.	SP
228- 273 OL (89-107)	mottled brown to dark brown (10YR4/3) sandy loam, weak coarse subangular blocks, noneffervescent, clear boundary.	SP
273- 293 MDL (107-115)	light brownish gray (2.5Y6/2) silt, with common medium yellowish brown (10YR5/6) mottles, weak coarse subangular blocks, noneffervescent, gradual boundary.	ML
293- 630 O/DU (115-243)	light olive brown (2.5Y5/4) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
630- 720 D/UU (243-283)	light yellowish brown (2.5Y6/4) medium sand, single grain, very slightly effervescent, indeterminate boundary.	SP
720- 795 D/UU (283-313)	light yellowish brown (2.5Y6/4) coarse, very coarse sand and pebbles, slightly effervescent, indeterminate boundary.	SW
795- 845 D/UU (313-333)	dark grayish brown (2.5Y4/2) fine sand, single grain, slightly effervescent, indeterminate boundary.	SP
845- 905+D/UU (333-356)	light yellowish brown (2.5Y6/4) coarse, very coarse sand and pebbles, very, slightly effervescent, refusal.	SW

DLC-59

Master core number: 594

Location: SE. 1/4, SW. 1/4, Sec. 1, T16N, R13W, Morgan County,

Landscape position: Indian Creek alluvium

SCS mapped soil: Tice silt, cla. loam

Elevation: 133.8m (439ft)

Cored to: DGL, CCD

Described to: DGL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 25 SPOIL (0- 10)	clear boundary.	ML
25- 205 SOLUM (0- 81)	sandy silt loam to light silt loam at base, clear boundary.	ML
205- 289 ML (81-114)	light brownish gray (2.5Y6/2) fine silt to light silt loam, with common medium light olive brown (2.5Y5/6) and with few medium light reddish brown (5YR6/3) mottles, weak coarse subangular blocks to massive, noneffervescent, becomes weakly laminated toward base, few pebbles in matrix at base, abrupt boundary.	ML
289- 300 MDL (114-118)	light brownish gray (2.5Y6/2) fine silt, with common medium red (2.5YR5/6) and with faint few medium light reddish brown (5YR6/3) mottles, noneffervescent, interstratified with high, oxidized orange very fine sand, corrosion zones, clear boundary.	ML
300- 310 MDL (118-122)	light olive brown (2.5Y5/4) fine sandy loam, noneffervescent, interstratified with few 10YR4/6 fine sand, loam lenses, indeterminate boundary.	SP
310- 460 OL (122-189)	dark yellowish brown (10YR4/6) medium sand, single grain, noneffervescent, indeterminate boundary.	SP
460- 540 D/UU (189-213)	grayish brown (2.5Y5/2) medium sand, single grain, noneffervescent, indeterminate boundary.	SP
540- 600+D/UU (213-236)	grayish brown (2.5Y5/2) coarse, very coarse sand, and pebbles, noneffervescent, refusal.	SW

DLC-60

Master core number: 595
 Location: NE, SE, NW, Sec. 12, T16N, R13W, Moreau County,
 Landscape position: Blue Island channel (old bed of Blue Pond)
 SCS mapped soil: Ambrow clay loam
 Elevation: 132.6m (435ft)
 Cored to: DGL, CDD
 Described to: DGL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 152 SOLUM (0- 60)	silty clay loam to heavy silt loam, clear boundary.	CL
152- 180 C(DL) (60- 71)	light olive gray (5Y6/2) fine silt, massive, noneffervescent, clear boundary.	ML
180- 215 UL (71- 85)	olive gray (5Y5/2) fine sandy loam, weak fine subangular blocky, noneffervescent, gradual boundary.	SP
215- 235 UL (85- 93)	olive gray (5Y5/2) silt, massive, noneffervescent, very abrupt boundary.	ML
235- 240 U/DL (93- 94)	grayish brown (2.5Y5/2) medium sand, single grain, noneffervescent, indeterminate boundary.	SP
240- 420 ?? (94-165)	no recovery, probably sand, indeterminate boundary.	?
420- 446 UL (165-176)	dark olive gray (5Y3/2) pebbly fine sandy loam, noneffervescent, indeterminate boundary.	SP
446- 460+0/DL (176-189)	dark grayish brown (10YR4/2) coarse, very coarse sand, and pebbles, noneffervescent, refusal.	SM

DLC-61

Master core number: 596
 Location: NE, SE, SW, Sec. 11, T16N, R13W, Moreau County,
 Landscape position: Bluffs terrace
 SCS mapped soil: Sparta loam sand
 Elevation: 134.4m (441ft)
 Cored to: DGL, CDD
 Described to: DGL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 105 SOLUM (0- 41)	loam sand, gradual boundary	SP
105- 158 C(OL) (41- 62)	dark yellowish brown (10YR4/6) sand, loam, interstratified with few thin light brownish gray (2.5Y6/2) silt lenses, weak coarse subangular blocky, noneffervescent, very abrupt boundary.	SP
158- 238 MDL (62- 94)	grayish brown (2.5Y5/2) fine silt, with faint common medium dark yellowish brown (10YR4/6) and with common medium light reddish brown (5YR2/3) mottles, weak coarse subangular blocky, noneffervescent, becomes laminated with very thin Fe and Mn heavily stained lenses in lower 10cm, clear boundary.	ML
238- 278 O/DL (94-109)	light olive brown (2.5Y5/4) medium sand, single grain, noneffervescent, clear boundary.	SP
278- 300 O/DL (109-118)	light olive brown (2.5Y5/6) fine sand, single grain, noneffervescent, clear boundary.	SP
300- 315 DU (118-124)	light brownish gray (2.5Y6/2) medium to coarse sand, single grain, very slightly effervescent, indeterminate boundary.	SP
315- 405 O/DL (124-195)	light olive brown (2.5Y5/4) medium sand, single grain, strongly effervescent, indeterminate boundary.	SP
405- 540+DL (195-213)	dark yellowish brown (10YR4/4) coarse, very coarse sand, and pebbles, strongly effervescent, refusal.	SM

DL0-62

Master core number: 597
 Location: SW, NH, Sec. 12, T16N, R13W, Morgan County,
 Landscape position: Bus Island channel
 SCS mapped soil: Ambraw cla. loam
 Elevation: 133.5m (438ft)
 Cored to: DSL, CCD
 Described to: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 175 SOLUM (0- 69)	silty clay, clear boundary	CL
175- 232 BC (69- 91)	grayish brown (2.5Y5/2) loam, with man. medium yellowish brown (10YR5/6) and with common large ver. dark grayish brown (10YR3/2) mottles, weak coarse subangular block., noneffervescent, clear boundary.	ML
222- 260 (UL) (91-102)	light olive gray (5Y6/2) silt, with few medium yellowish brown (10YR5/6) mottles, massive, noneffervescent, large krotovina separates this zone from the zone below, indeterminate boundary.	ML
260- 420 UU (102-165)	olive gray (5Y5/2) silt, sandy loam, massive, very slightly effervescent, few light brownish gray (2.5Y6/2) medium sand strata at base, indeterminate boundary.	ML
420- 430+UU (165-169)	olive gray (5Y5/2) pebbly, medium sand, ver. slightly, effervescent, refusal.	SP

DL0-63

Master core number: 598
 Location: NE, SW, NH, Sec. 29, T17N, R12W, Cass County,
 Landscape position: dune on Bluffs terrace
 SCS mapped soil: Painfield loam, sand
 Elevation: 137.5m (451ft)
 Cored to: DSL, CCD
 Described to: DSL

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 41 SOLUM (0- 16)	sandy loam, abrupt boundary.	SP
41- 164 2Bu (16- 65)	dark yellowish brown (10YR3/4) clayey sandy loam, moderate medium subangular block., noneffervescent, clear boundary.	SP
164- 342 (OL) (65-135)	yellowish brown (10YR5/6) to yellowish brown (10YR5/8) medium sand, stratified with six 5-15cm. thick dark yellowish brown (10YR4/3) sand, loam strata, noneffervescent, sandy loam strata with weak medium subangular blocky structure, abrupt boundary.	SP
342- 357 MDL (135-141)	light olive gray (5Y5/2) silt loam, with common medium yellowish brown (10YR5/4) mottles, weak coarse subangular block., very firm, noneffervescent, abrupt boundary.	ML
357- 397 OL (141-156)	dark yellowish brown (10YR4/4) sandy loam, stratified with few ver. pale brown (10YR7/3) less than 1cm. thick coarse sand lenses, noneffervescent, abrupt boundary.	SP
397- 480 OL (156-189)	light olive brown (2.5Y5/6) medium sand, stratified with few thin strata of brown (10YR4/3) sandy loam, noneffervescent, indeterminate boundary.	SP
480- 610 O/DU (189-240)	light olive brown (2.5Y5/4) medium sand, one quartz pebble at 600cm., very slightly effervescent, indeterminate boundary.	SP
610- 720 O/DU (240-283)	light olive brown (2.5Y5/4) medium sand, single grain, strongly effervescent, indeterminate boundary.	SP
720- 800 DU (283-315)	light olive brown (2.5Y5/4) to grayish brown (2.5Y5/2) coarse sand, strongly effervescent, indeterminate boundary.	SP
800- 840+O/DU (315-331)	light olive brown (2.5Y5/6) coarse and ver. coarse sand, strong, effervescent, refusal.	SP

DLC-64

Master core number: 599
 Location: SE,NE,SW,Sec.6,T16N,R12W, Morgan Co., about 18 m. east of Hwy.
 100 on field rd.
 Landscape position: natural levee of Indian Creek paleochannel
 Surface archeology: none
 SCS mapped soil: Gr 1c loam
 Elevation: 135.9m. (446ft.)
 Cored by: David S. Leigh and Cynthia C. Danley, 6-26-84
 Described by: Edwin R. Hall, 8-13-84

Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 145 OL (0- 57)	solon of a sandy loam, abrupt boundary	SP
145- 215 C(OL) (57- 85)	yellowish brown (10YR5/6) and dark yellowish brown (10YR4/6) fine sand and loam; fine sand, weakly stratified, noneffervescent, based on the first clay lamination below there is an abrupt boundary.	SP
215- 345 OL&D/UU (85-136)	dark yellowish brown (10YR4/6) and dark yellowish brown (10YR3/6) fine and medium sand (with some silt), weakly stratified, few zones with fine sandy loam, few zones with olive gray (5Y5/2) and grayish brown (2.5Y5/2) clay and sand; clay very slightly effervescent laminae, rest of unit is noneffervescent, indeterminate boundary.	SP
345- 550 UU (136-217)	grayish brown (2.5Y5/2) and dark grayish brown (2.5Y4/2) fine and medium sand, slightly to strongly effervescent, indeterminate boundary.	SP
550- 720+UU (217-283)	grayish brown (2.5Y5/2) and dark grayish brown (2.5Y4/2) medium and coarse sand, poorly sorted, many very fine and fine pebbles (up to 1.5 cm. diam.), violently effervescent, refusal.	SW